

# **EXHIBIT 1**



**DEPARTMENT OF THE AIR FORCE**  
**UNITED STATES SPACE FORCE**  
**SPACE SYSTEMS COMMAND**

**CUI**

24 December 2021  
PCOL-IIIF-21-0029

**MEMORANDUM FOR LOCKHEED MARTIN SPACE SYSTEMS COMPANY (LMSSC)**

**FROM: SMC/PCK**

483 N. Aviation Blvd.  
Los Angeles SFB  
El Segundo, CA 90245

**SUBJECT: Contracting Officer's Final Decision (COFD), Contract FA8807-18-C-0009, Delivery of GPS IIIF Bus and Navigation Payload Flight Software—including On Board Computer (OBC)/Thermal Control Unit (TCU)/Mission Data Unit (MDU)/Flight Software (Including Source Code) Under CDRL A032 (Software Product Specification)—Corrected**

Pursuant to FAR 52.233-1 (Disputes)(MAY 2014) of contract FA8807-18-C-0009, this Contracting Officer's Final Decision determines that the United States Space Force (Space Force) is entitled under the terms and conditions of that contract to delivery of all GPS IIIF Space Vehicle Bus and Navigation Payload Flight noncommercial and commercial technical data and computer software—including both source and executable code (including OBC/TCU/MDU Flight Software source code) but excluding Commercially Available Off-the Shelf (COTS) source code—under CDRL A032. I also determine that that contract requires LMSSC to provide that intellectual property (IP) content via TopVue and the Integrated Data Environment-Repository (IDE-R) subdivision of the GPS IIIF Collaborative Environment (GCEF) enclave by the dates specified in BLKs 12-13 of the DD Form 1423 for that CDRL. The Government expects all technical data and computer software delivered under CDRL A032 will be affixed with appropriate restrictive markings consistent with Tables 1 and 2 of Attachment 5 of contract FA8807-18-C-0009. Furthermore, I find that Lockheed has failed to demonstrate that "new information" exists as that term is used in DFARS 252.227-7014(e)(3).

Controlled By: U.S. Space Force  
Controlled By: SMC/PCK  
CUI Category: Procurement and Acquisition,  
Proprietary Business Information  
Distribution: FEDCON  
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This final decision includes a description of the government’s claim, a reference to pertinent contract terms, a statement of the factual areas of agreement and disagreement, and a statement of my decision with supporting rationale. Section I provides an Executive Summary, Section II provides a Chronology of Events, Section III discusses the facts that support my decision, and Section IV provides my decision. For ease of reference, Section III cites to sequentially-numbered findings of fact (“Finding XX”) that are provided in Section II.

By letter dated July 29, 2021, LMSSC asserted that it is not contractually required to deliver source code “but has agreed to make the source code available with appropriate markings.” As LMSSC has asserted an alternate interpretation of CDRL A032 that relies on parol evidence, I have detailed in Section II belows what IP rights the Air Force requested in the GPS IIIF Final Request for Proposals (RFP), and what IP rights LMSSC granted the Air Force (now Space Force) to the IP content described in CDRL A032 that LMSSC must deliver to the Space Force under the GPS IIIF contract.

As stated above, the scope of this Final Decision is limited to an interpretation of terms of the GPS IIIF contract relative to what IP content that contract requires LMSSC to deliver to the Government, and the means whereby LMSSC must provide that IP content to the Space Force. I find the contract language identifies what IP content LMSSC must deliver under CDRL A032, the manner of delivery of that content, and the IP rights LMSSC granted to the Government under the contract to that content, are unambiguous. I also find the Government has not agreed to any course of dealing or course of performance that would modify that express contract language.

## **I. EXECUTIVE SUMMARY**

Prior to the Air Force releasing the GPS IIIF Final Request for Proposals (RFP), LMSSC identified various errors in the descriptions of IP content in various DD Form 1423s—including in the DD Form 1423 for CDRL A032. But at no time after the Air Force released the GPS IIIF Final RFP did LMSSC take exception to language in the DD Form 1423 for that CDRL or the corresponding draft RFP’s IP Rights Attachment text for that CDRL that stated the awardee would be required to deliver computer software (including source code) to the Space Force under that CDRL. That language remains in the GPS IIIF contract to this day.

The GPS IIIF contract requires LMSSC to deliver “executable files” and “source files” for all Software Items (SI)—including OBC/TCU/MDU Flight Software—excluding COTS source code residing on the GPS IIIF Space Vehicle. Various authoritative resources—including a critical compliance document incorporated by reference into the GPS IIIF contract—state that “source files” contain “source code”.

A different IP deliverable (CDRL A022) LMSSC submitted to the Space Force 2½ years after contract award—that LMSSC must use to develop software when performing the GPS IIIF contract—repeatedly uses the term “source code files”. Since that phrase is not used anywhere in the GPS IIIF contract, LMSSC intentionally chose to use the term “source code files” in that deliverable. This post-award conduct validates the Space Force’s position that source files contain source code.

The GPS IIIF contract requires that LMSSC deliver all IP content required to be delivered by CDRL A032 (including OBC/TCU/MDU Flight Software source code) by uploading that data to TopVue and the IDE-R subdivision of the GCEF enclave—not into some other non-IDE-R subdivision of the GCEF enclave.

## **II. CHRONOLOGY OF EVENTS.**

### **A. Relevant Market Research Activities Prior to Request for Proposal (RFP) Release.**

1. As part of market research performed in accordance with FAR 15.201(c)(6), in the summer and fall of 2017, the U.S. Air Force issued draft GPS IIIF RFPs to solicit feedback from potential offerors. LMSSC submitted comments in response to those draft RFPs. Relevant examples of those comments and the Air Force’s responses thereto follow.

#### **1. Section J, Exhibit A**

##### **a. CDRL A027 (Software Design Description)**

2. On or about August 17, 2017, LMSSC made the following comment with respect to “Att 05[ of the] Rights in Technical Data” Section J attachment of the draft GPS IIIF RFP:

#### **COMMENT**

[In Exhibit A,] CDRL A027 (S[oftware ]D[esign ]D[escription]) DD 1423 says [at the top of BLK 16 of that DD Form 1423 that] “This CDRL contains only technical data” and is listed under Table 1 of Att 05 with “Unlimited” rights. DFARS 252.227-7014(a)(4) defines “computer software” to include design details, algorithms, formulae. A Software Design Description developed in accordance with SMC-S-012 and DI-IPSC-81435A/T includes “computer software” as defined by the DFARS. Therefore the CDRL A027 DD 1423 should be revised to say “This CDRL contains technical data and computer software” and Att 05 should be updated to include Government Purpose Rights for Software contained in CDRL A027.

#### **RATIONALE**

CDRL tech data rights inconsistent with DFARS 252.227-7014[.]

3. Initially, the Air Force rejected LMSSC’s recommended change and provided its rationale for that rejection to LMSSC. After receiving that response, on or about November 3, 2017 LMSSC provided the following more detailed explanation for its position:

## COMMENT

Gov't asserts that CDRL A027 does not contain computer software because it is not sufficient to "enable the software to be reproduced, recreated, or recompiled" IAW DFARS 252.227-713(a)(3), and as Mr. Jim [H]aag explained to contractor counsel [Kenneth Johnson, General Counsel, Intellectual Property, LMSSC], the CRM#27 states at outset of the document, "This CDRL contains only technical data."

However, CDRL A027 DD 1423 tailoring of DI-IPSC-81435A/T states: "the Software Design Description (SDD) describes . . . the detailed design needed to implement the software. It is used as the basis for implementing the software. It shall describe . . . detailed design needed to implement the software. In addition, the detailed design shall include procedural design including algorithms."

This is consistent with DFARS 252.227-7013(a)(3) and DFARS 252.227-7014(a)(4) definition of "Computer software" which includes design details, algorithms, processes, flow charts and related material that would enable the software to be reproduced or recreated.

Someone with the SDD is able to implement the software, i.e. recreate it. The SDD does not meet the DFARS definition of "computer software documentation" (252.227-7013(a)(4)) which consists of owner's manuals, user's manuals, installation instructions, operating instructions . . . that explain the capabilities of the computer software or provide instructions for using the software. The SDD provides instructions for recreating the software, not for using it. The SDD contains design details that cannot be considered form, fit, and function data.

Does the Government request under CRM #27 merely a description of the software or the actual algorithms per the DFARS, and as is consistent with similar SMC programs?

## RATIONALE

SDD (CDRL A027) contains computer software and therefore the Gov't should only be entitled to Unlimited rights to CDRL A027 under the conditions stated in DFARS 252.227-7014(b)(1)(i), e.g., computer software developed exclusively with Gov't funds [emphasis added].

4. In response, the Air Force concluded that “[a]fter review the information contained in A027 could be considered ‘Computer Software’ per DFARS 252.227-7014(a)(4). Attachment 5 and Section L will be updated accordingly.” Accordingly, the Air Force proceeded to modify the draft GPS IIIF RFP in the following manner:

- It changed the first sentence in BLK 16 of the DD Form 1423 for CDRL A027 from “This CDRL contains only technical data” to “This CDRL contains technical data and computer software.” to be the same as that contained in BLK 16 of the DD Form 1423 for CDRL A032.
- It split the “Gov’t Asserted RIGHTS CATEGORY” (Column 3) and the “Offeror Proposed RIGHTS CATEGORY” (Column 4) cells in the row for CDRL A027 in Table 1 of Attachment 5 of Section J of that RFP into two sub-cells. The result was that the row for CDRL A027 would be a mirror image of the split-cell approach for the row associated with CDRL A032 replicated below. (Finding 24). In other words, the GPS IIIF Final RFP would state (1) the offeror would be required to deliver two types of IP content (technical data, computer software)—not one type (technical data), and (2) the Government’s minimum needs were Unlimited Rights (UR) for all noncommercial technical data, and Government Purpose Rights (GPR) for all noncommercial computer software, the awardee would deliver to the Government under CDRL A027 in the same manner as would be the case for CDRL A032.

**b. CDRL A032 (Software Product Specification)**

5. On or about August 17, 2017, LMSSC made the following comment with respect to “Exhibit A – CDRLs”, and in particular “CDRL A032 – Blk 16” of the draft GPS IIIF RFP:

**COMMENT**

CDRL A032 DD 1423 says that initial delivery (Blk 12) is required 30 CD after completion of SIQT of “the Space Vehicle”. Subsequent deliveries due 30 CD after completion of each build. There is no SIQT of the SV. Assumes this means SIQT of each deliverable software item. Also the term “build” is defined in SMC-S-012 as “a version of software that meets a specified subset of the requirements that the completed software will meet.” Assumes that “build” in the CDRL 1423 was intended to mean any deliverable software item releases after the initial SIQT. Suggest rewording as:  
 BLK 12: Submit 30 CD after completion of the deliverable ST’s qualification testing (SIQT)  
 BLK 13: Submit 30 CD after completion of each SI’s requalification or regression testing of a SI change after the SI’s initial SIQT.

## **RATIONALE**

CDRL delivery requirements confusing[.]

6. After carefully reviewing the documents cited by LMSSC in support of its position, the Air Force agreed with LMSSC's position and proceeded to modify the draft GPS IIIF RFP such that the result was substantively identical to that which LMSSC had recommended:

BLK 12: Submit 30 CD after completion of each initial SIL's Qualification Testing (SIQT)

BLK 13: Submit 30 CD after completion of each SIQT of subsequent SI builds.

### **c. CDRL A058 (Software Measurement Report)**

7. On or about November 3, 2017, LMSSC made the following comment with respect to "Att 05[ of the] Rights in Technical Data" Section J attachment of the draft GPS IIIF RFP:

## **COMMENT**

CDRL A058 (S[oftware] Measurement Report) states it contains only technical data. Please update CDRL A058 to say, "This CDRL contains technical data and contract administration information", and add CDRL A058 to Att 05, Table 3. Table 1 should also specify that GPR applies to technical data only.

## **RATIONALE**

SMC-S-012 Appendix H.5 requires reporting of contact administration information, for example: 5.x.y.4 "Schedule adherence management indicator", 5.x.y.5 "Effort profile management indicator (staffing level, staff by experience, staff turnover)", 5.x.y.8 "Cost profile management indicator (earned value performance, schedule and cost performance index, schedule and cost variance)", 5.x.y.15 "Productivity management indicator (development productivity)", 5.x.y.17 "Management status management indicator (action item closure, risk mitigation task completion status, schedule compression)"

8. After carefully reviewing the text in the sub-sub-subparagraphs LMSSC cited from Appendix H.5 to SMC-S-12, the Air Force concurred for the most part with LMSSC's position and concluded that it would modify the draft GPS III RFP in the following manner:

1) CDRL A058: Changed the first line at the top of BLK 16 to "This CDRL contains technical data and contract administration information."



2) Attachment 5: Changed Table 1, CDRL A058, Column 2 to read “Technical Report-Study/Services (Software Measurement Report (SMR))(Except SMC-S-012, Appendix H.5, Sections 5.x.y.4, 5.x.y.5, 5.x.y.6, 5.x.y.7.8, and 5.x.y.17)”.

3) Added[ ]new row to Table 3 between CDRL A041 and CDRL A112. Column 1 of that new row will be “A058”. Column 2 of that new row will be “Technical Report-Study/Services (Software Measurement Report (SMC))(SMC-S-012, Appendix H.5, Sections 5.x.y.4., 5.x.y.5, 5.x.y.6, 5.x.y.8, and 5.x.y.17 only)”.

4) Changed Subsection d.(2) to “(i.e., CDRLs A006, [A]007 A034, A058, A114)”.

5) By adding[ ] “Except SMC-S-012, Appendix H.5, Sections 5.x.y.4, 5.x.y.5, 5.x.y.6, 5.x.y.8, and 5.x.y.17)” to the Table 1 entry for A058, GPR only applies to the technical data portion of the delivery.

6) Since SMC-S-012, Appendix H.5, Section 5.x.y.15 requires the delivery of technical data, specifically, “base and derived measures of [development] productivity”, no further changes are required.

## **2. Section J, Attachment 2 (Statement of Work)**

9. On or about October 31, 2017, LMSSC made the following comment with respect to paragraphs 2.2.8.G and 3.2.6.I of the Statement of Work Section J attachment of the draft GPS IIIF RFP:

### **COMMENT**

Paragraph (i) states “include transition of software sustainment to the support agency.” Please clarify on if it is the government's intent to trans[i]tion F[light] S[oftware (FSW)] sustainment to a different contractor.

### **RATIONALE**

FSW sustainment requires a large development/test infrastructure which is tightly integrated with contractor facilities and proprietary contractor data and processes. If the government’s intent is to compete FSW sustainment, additional ground rules are needed for costing of this transition within the GPS [IIIF] contract.

10. In response, the Air Force quoted from the response it received from its Logistics division:

[W]e do have a software sustainment strategy in place and it is to go sole-source to the prime contractor. That is our intent. However, we the Government reserve the right to compete the sustainment



should we decide in the future to change our software sustainment strategy.

### **3. Section L (Instructions to Offerors)**

#### **a. Section L-6.3.4.1.1**

11. On or about November 13, 2017, LMSSC made the following comment in regards to Section L 6.3.4.1.1. Exhibit A: Contract Data Requirements List (CDRL) of the draft GPS IIIF RFP:

#### **COMMENT**

Section L, 6.3.4.1.6 (c ) states that “Where there are valid reasons why an Offeror must develop entirely at private expense or provide previously developed technical data or computer software under this contract the Offeror may not be required, either as a condition of being responsive to this RFP or as a condition for award, to sell or otherwise relinquish to the Government any proprietary right in technical data or computer software developed at private expense. . .”

We believe there is an inconsistency between: 1) this paragraph above and DFARS 252.227-7013, -7014, and -7018; and 2) the other requirements of the RFP concerning data rights (i.e., “minimum needs” regarding Intellectual Property Rights). Because Section L (as quoted) recognizes that the Government may not require an offeror to relinquish its rights in technical data or computer software developed at private expense and that such data/software may be used, we understand that the Government does not require relinquishment of such rights and there would not be any adverse impact in the evaluation from an offeror following such an approach using such data/software and retaining rights. Please amend Section L to clarify that Offeror[s] can deviate from the minimum needs when there is a valid reason where technical data or computer software has been developed exclusively or partially at private expense. This should be reflected in Section M evaluation criteria.

#### **RATIONALE**

Modification is requested to eliminate inconsistency with DFARS for items developed exclusively or partially at private expense.

12. In response, the Air Force stated that:

The comment deleted the last sentence fragment in Section L-6.3.4.1.6(c). That sentence fragment reads as follows: “except for the items identified at DFARS 227.7103-5(a)(2) and (a)(4) through (a)(9), DFARS 227.7203-5(a)(3) through (6) and DFARS 227.7102-1(a)”. 10 U.S.C. § 2320(a)(2)(H)(i)(II)—states that the Government has the unqualified right to require any offeror as a condition of being responsive to a solicitation or as a condition of award of a contract to relinquish all such rights to all such technical data developed exclusively at private expense.

Without the identification of a specific item of technical data or computer software the potential offeror expects to deliver in response to a Data Item Description invoked in BLK 4 of any of the 111 CDRLs contained in Exhibit A, and the substantiating records required by DFARS 252.227-7019(b) and DFARS 252.227-7037(c) that proves by clear and convincing evidence that an offeror developed any of the content described delivery exclusively at private expense, or that that content is properly classified as COTS or a commercial item the government is unable to adequately evaluate the perceived/potential benefits to the government for altering the current level of required data rights. The comment’s proposed approach is not executable. The Government’s minimum needs are established by the GPS Directorate, and the Government has expressly stated its minimum needs for license rights CDRL-by-CDRL—as listed in Section L-6.3.4.1.6.b. The pedigree of its minimum needs are consistent with H.R. Rep. No. 115-200, p. 165.

Additionally, since implementing the comment’s suggestion would create the absence of a common technical baseline, there would be no way for the Government to complete a proper cost/price-technical tradeoff analysis between offerors proposing whatever level of license rights they believed would satisfy the Government unstated “minimum needs” accompanied by an aggregated price for IP rights under CLIN 0011 to the data to be delivered via a specific CDRL.

**b. Section L-6.3.4.1.6.b.2)**

13. On or about November 13, 2017, LMSSC also made the following comment in regards to Section L-6.3.4.1.6.b.2) of the draft GPS IIIF RFP:

## **COMMENT**

Section L states, “Attachment 5 must be delivered with at least that level of license rights in order to compete on-orbit sustainment of GPS III Follow-On Production SVs after the period of performance of the GPS III Follow-On Production contract has ended.”

Given the Government has determined the level of rights required to comp[ete] on-orbit sustainment, why didn't the Government allow Offerors to generally bid the appropriate level of rights based on DFARS and how the data or software was actually developed, while allowing the Government a specially negotiated license for the On-Orbit Sustainment Contractor(s)? If this is the Government's intent, please revise Attachment 5, Section L, and Section M to reflect this change?

## **RATIONALE**

This change would allow offerors to protect their own data, while still meeting the Government's intent to provide data to On-Orbit Sustainment Contractor(s).

14. In response, the Air Force stated that:

Since this comment has a quote from Section L-6.3.4.1.6.b.2), and when it is read in conjunction with Attachment 5, Table 1, it is clear that the comment relates only to CDRLs A001-A005, A008-A009, A013, A032, A034, A036-A037, A044, A047, A058, A063, A066, A069, A070, A072-A073, A078, A080-A083, A086, A088-A090, A093, A095, A099, A107, A109, A114, A124, A126, and A151.

The GPS Directorate does not intend to permit offerors to propose data rights different from what is listed in Attachment 5 of this solicitation for the following reasons:

1) The comment is written from a theoretical level which makes it impossible to modify any of the requested data rights. Without a compelling argument, i.e. a specific item of technical data where the requested data rights may affect the proposal, it is impossible to modify any of the requested data rights.

2) The definition of “Government Purpose Rights” in DFARS 252.227-7013(a)(13) and -7014(a)(12) expressly permits the Government to use technical data and computer software to be delivered with those rights to compete on-orbit sustainment of GPS IIIF satellites.

3) The Government is requesting the offerors propose a “specially negotiated license” (i.e., Government Purpose Rights) for specific CDRLs or portions thereof based upon the three parameters enunciated in H.R. Rep. No. 115-200: “[T]he committee urges program managers when seeking technical data to consider . . . the purpose for which it will be used, with whom the government needs to share it, and for how long the government needs it.”

4) Each offeror could propose a different special license for each sentence, paragraph, and page of each of the 111 CDRLs in Exhibit A, but this would eliminate the Government's ability to use a common technical baseline when evaluating the technical acceptability of each offeror's proposal.

## **B. Relevant RFP Provisions.**

15. On February 13, 2018, the Air Force issued the GPS IIIF Final RFP (Solicitation No. FA8807-17-R-0009). Prior to receiving initial proposals, the Contracting Officer amended that RFP three times. The relevant parts of that RFP summarized and quoted below are from the copy of the RFP conformed through those amendments.

16. Section B, Contract Line Item Number (CLIN) 0011 (Firm Fixed Price) (Rights in Data (Tech Data, Computer Software, Docs) of the GPS IIIF Final RFP stated that “[t]he Contractor shall deliver all rights in data (including technical data, computer software, and computer software documentation) required by Attachment 5 (Rights in Data).” CLIN 0012 (Fixed Price Incentive Firm)(Data & Reports) stated that “[t]he Contractor shall provide data and reports in accordance with Exhibit A, ‘Contract Data Requirements List (CDRL)’”.

17. Section J of the GPS IIIF Final RFP incorporated by reference various Exhibits and Attachments.

18. For example, Exhibit A (Contract Data Requirements List (CDRL) GPS III Follow-On Production) (13 February 2018), Section I (CDRL Instructions), section 6.4 (Submittal Procedures) stated that “[u]nclassified CDRLs are submitted to the government via TopVue and in accordance with this instruction. . . .”

19. Exhibit A, Section II (Summary CDRL List—CDRLs A001 through A152) included a number of DD Form 1423s requiring the delivery of IP content; *e.g.*, CDRL A022 (Software Development Plan (SDP)), CDRL A027 (Software Design Description (SDD)), CDRL A032 (Software Product Specification (SPS)), CDRL A058 (Software Measurement Report (SMR)). As a direct result of the feedback LMSSC provided on the draft GPS IIIF RFP described above, the Government inserted the following sentence at the top of BLK 16 of the DD Form 1423 for CDRL A027: “This CDRL contains technical data and computer software.”

20. Similarly, as a direct result of the feedback LMSSC provided on the draft GPS IIIF RFP described above, BLK 16 of CDRL A032 described the IP content of that deliverable as follows:

This CDRL contains technical data and computer software.

BLK 4: Tailor DI-IPSC-81441A as follows:

1) Replace all references to “computer software configuration item” and “CSCI” with “Software Item” and “SI” respectively.

2) Replace the first two paragraphs in the “Use, Relationships:” section with the following two paragraphs:

“One or more Software Product Specifications shall be prepared for all software items in the following categories of software (including the software portion of firmware): Space Vehicle flight software and other software used in satisfying, verifying or validating requirements or used in performing supporting operations or sustainment (e.g., training, modeling, simulation, analysis, database support, automatic test equipment, maintenance).

Include, as an appendix to the SPS, a software version description per DI-IPSC-81442A, and replace all references to “computer software configuration item” with “software item”.”

3) At the end of paragraph, “3.2. Source files”, add “The source files shall include all noncommercial computer software, and all commercial item computer software (excluding Commercially Available Off-the-Shelf (COTS) software.”

BLK 5: SOW 2.1.1.6.10.d., 2.2.2.8.a., 2.2.3.8.a, 2.4.3.a, 3.1.1.6.10.d, 3.2.2.8.a., 3.2.8[.]h.

...

BLK 12: Submit 30 CD after completion of each initial SI’s Qualification Testing (SIQT).

BLK 13: Submit 30 CD after completion of each SIQT of subsequent SI builds.

21. Section J, Attachment 1 (Work Breakdown Structure (WBS) and WBS Dictionary GPS Follow-On Production) of the GPS IIIF Final RFP, identifies the Navigation Payload Flight Software as WBS Element 1.2.3.8. The “Space Vehicle flight software” described in CDRL A032 includes the “Navigation Payload Flight Software”, which in turn contains all the SIs that comprise the OBC/TCU/MDU Flight Software.

22. Section J, Attachment 2 (Statement of Work (SOW) GPS III Follow-On Production)(March 12, 2018) of the GPS IIIF Final RFP stated in pertinent part that:

**2.1 Space Segment Systems Engineering/Program Management**

The contractor shall accomplish the following SE/PM tasks:

\* \* \*

***2.1.1.6.10 Space Vehicle Software***

- a. Develop, provide, and implement a Software Development Plan (SDP) IAW SMC-S-012. Include a deficiency report (DR) plan, software metrics program, integration and verification approach, and a maintainability program for the full software lifecycle. (CDRL A022)
- b. . . .
- c. . . .
- d. Establish software product baselines to support code and unit testing. (CDRL A027) (CDRL A032) (CDRL A059)

\* \* \*

***2.1.2.4 Data Management***

Establish and maintain a structure electronic collaborative IDE Repository IAW Attachment 5 to the contract, Appendix B.

\* \* \*

**2.2 Space Vehicle (SV) Design**

The contractor shall design, develop, and qualify an SV design that meets the effectivity 65 requirements of SS-SS-900. (CDRL A010) (CDRL A011) (CDRL A012) (CDRL A047) (CDRL A107)  
Specifically, the contractor shall accomplish the following tasks:

\* \* \*

***2.2.2.8 Bus Flight Software***

- a. Develop and qualify the bus flight software detailed design IAW the Software Development Plan, the Software Test Plan, and SMC-S-012 that meets the allocated bus flight software requirements IAW SS-SS-900 and SMC-S-012. Develop and provide the software planning and design artifacts. (CDRL

A025) (CDRL A026) (CDRL A027) (CDRL A029) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034)

\* \* \*

#### ***2.2.3.8 Navigation Payload Flight Software***

- a. Develop and qualify the NPL flight software detailed design IAW the SDP and SMC-S-012 that meets the allocated NPL software requirements IAW SS-SS-900 and SMC-S-016. Develop and provide the software planning and design artifacts. (CDRL A025) (CDRL A026) (CDRL A027) (CDRL A029) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034)

\* \* \*

### **3.2 Space Vehicle**

The contractor shall fabricate, assemble, integrate, test, and deliver SVs in accordance with SS-SS-900, effectivity 65. (CDRL A107) (CDRL A108)

Specifically, the contractor shall accomplish the following tasks:

\* \* \*

#### ***3.2.2.8 Bus Flight Software***

- a. Update, code, test, document, install, integrate, verify, and maintain flight software for performing spacecraft bus functions and conduct formal qualification testing of flight software IAW the Software Development Plan, the Software Test Plan, Descriptions and Procedures, ISO/IEC 15939, and SMC-S-012. (CDRL A022) (CDRL A026) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034) (CDRL A114) (CDRL A107)

\* \* \*

#### ***3.2.8 Mission Operations Support***

\* \* \*

- h. Maintain and provide the flight software for on-orbit space segment assets during the mission operations support period



(through SCA of SV32) IAW the Integrated Support Plan and Software Development Plan. (CDRL A031) (CDRL A032).

\* \* \*

23. Section J, Attachment 4 (Compliance and Reference Documents GPS III Follow-On Production) (March 27, 2018), Table 1, identified SMC-S-012 (Software Development) (January 16, 2015), as a compliance document.

24. Section J, Attachment 5 (Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation) of the GPS IIIF Final RFP contained various tables that, when populated by Offerors in accordance with section L-6.3.4.1.6.d.-f. of the GPS IIIF Final RFP, would identify what IP rights the Offeror proposed to grant the Air Force CDRL-by-CDRL-by-CDRL. Table 1 (Rights in Noncommercial Technical Data, Computer Software, and Computer Software Documentation) of Attachment 5 stated in pertinent part that:

Column 1	Column 2	Column 3	Column 4	Column 5
CDRL NO.	DATA ITEM TITLE (SUBTITLE)	Gov't Asserted RIGHTS CATEGORY	Offeror Proposed RIGHTS CATEGORY	PRICE
A027	Software Design Description (SDD)	<b>Technical Data:</b> Unlimited	<b>Technical Data:</b>	\$
		<b>Computer Software:</b> Government Purpose	<b>Computer Software:</b>	\$
A032	Software Product Specification (SPS) [(Includes Software Version Description) (SVD)]	<b>Technical Data:</b> Unlimited	<b>Technical Data:</b>	\$
		<b>Computer Software:</b> Government Purpose	<b>Computer Software:</b>	\$
A058	Technical Report- Study/Services (Software Measurement Report (SMR))(Except SMC-S- 012, Appendix H.5, Sections 5.x.y.4, 5.x.y.5, 5.x.y.6, 5.x.y.8, and 5.x.y.17)	Government Purpose		\$

The text in the row quoted above associated with CDRL A032 remained unchanged between the dates the Air Force issued draft GPS IIIF RFPs, and the date it issued the GPS IIIF Final RFP.

25. Although the preceding excerpt from Table 1 demonstrates the GPS IIIF Final RFP requested offerors propose more than one type of IP license to various portions of three CDRLs, the following is a complete list of all such CDRLs. This list is based upon my careful review of Tables 1 (Rights in Noncommercial Technical Data, Computer Software, and Computer Software Documentation) and 3 (Rights in Contract Administration Information) in Attachment 5 of the GPS IIIF Final RFP:

- **CDRL A006 (Engineering Change Proposal):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and a specially negotiated license for specific parts of that CDRL that are classified as contract administration information.
- **CDRL A007 (Request for Variance):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and a specially negotiated license for specific parts of that CDRL that are classified as contract administration information.
- **CDRL A011 (System/Subsystem Specification—B1/B2):** The Air Force requested offerors propose UR for part of the noncommercial technical data to be delivered under that CDRL, and Limited Rights (LR) for the remaining part of that CDRL.
- **CDRL A012 (System/Subsystem Specification—C1 and C2):** The Air Force requested offerors propose UR for part of the noncommercial technical data to be delivered under that CDRL, and LR for the remaining part of that CDRL.
- **CDRL A027 (Software Design Description):** Consistent with the comment LMSSC submitted when it reviewed the draft GPS IIIF RFP, (findings 2-3), the Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and GPR for all noncommercial computer software to be delivered under that CDRL. (Finding 24).
- **CDRL A032 (Software Product Specification):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and GPR for all noncommercial computer software to be delivered under that CDRL. (Finding 24).
- **CDRL A034 (Software Development Report):** The Air Force requested offerors propose GPR for all noncommercial technical data to be delivered under that CDRL, and a specially negotiated license for specific parts of that CDRL that are classified as contract administration information.
- **CDRL A058 (Software Measurement Report):** The Air Force requested offerors propose GPR for all noncommercial technical data to be delivered under that CDRL, and a specially negotiated license for specific parts of that CDRL that are classified as contract administration information. (Finding 24).
- **CDRL A082 (M-Code Test Plan and Test Vector Set):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and GPR for all noncommercial computer software to be delivered under that CDRL.
- **CDRL A114 (Software Maintenance Report):** The Air Force requested offerors propose GPR for all noncommercial technical data to be delivered under that CDRL, and a specially negotiated license for specific parts of that CDRL that are classified as contract administration information.
- **CDRL A123 (System/Subsystem Design Description):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and GPR for all noncommercial computer software to be delivered under that CDRL.

- **CDRL A124 (Software and Programmable Logic Evaluation Report):** The Air Force requested offerors propose UR for all noncommercial technical data to be delivered under that CDRL, and GPR for all noncommercial computer software to be delivered under that CDRL.

26. Section J, Attachment 5(d)(2) of the GPS IIIF Final RFP stated that

[s]ince some CDRLs (i.e., CDRLs A006, A007, A034, A058, A114) require the delivery of both technical data and contract administration information, different license rights will apply to those portions of those CDRLs that require the delivery of technical data than those portions that require the delivery of contract administration information. Under such circumstances, the Contractor shall affix all restrictive markings required by Tables 1 and 3 to the cover sheet of the CDRL, mark each subsequent sheet of data with an abbreviated marking(s) to indicate the applicable restrictive rights assertion(s), and refer to the title/cover page for additional information. . . .

27. Section L-3.7 (Volume 1 (Executive Summary), Chief Executive Officer Certification) of the GPS IIIF Final RFP stated that

The Offeror's proposal is required to meet all solicitation requirements, including, but not limited to, terms and conditions, representations, and certifications, and Statement of Work (SOW) requirements. The Offeror's CEO shall sign and submit a certification letter using the mandatory template in Section L[-6.4.2], Appendix B, certifying acceptance of the Terms and Conditions of the Model Contract and all Attachments thereto. This shall be one page and shall count towards the page limit for the Executive Summary.

28. Section L-4.2.4.3.b.1) (Volume II (Technical Factor), Subfactor 4 (Program Management), Criterion 3 (Intellectual Property Rights) of the GPS IIIF Final RFP stated in pertinent part that the Offeror's completed Section K provision (DFARS 252.227-7017 ("Identification and Assertion of use, Release, or Disclosure Restrictions")) shall

[c]ite to and quote the specific language (if any) in the applicable CDRL in Exhibit A that requires the delivery of that technical data, computer software, or computer software documentation. Citations provided shall be to the lowest achievable level of specificity, *e.g.*, a specific sub-sub-subsection of a compliance document cited in BLK 16 of a DD Form 1423, specific paragraph of text in BLK 16 of a DDD Form 1423 that is tailoring a DID cited in BLK 4 of that DD Form 1423.

29. Section L-6.1 (Model Contract/Representations and Certifications) of the GPS IIIF Final RFP stated in pertinent part that:

. . . If the Offeror proposes to deliver any noncommercial technical data, computer software, or computer software documentation with other than Unlimited Rights, the Offeror shall complete the Section K provision entitled “Identification and Assertion of Use, Release or Disclosure Restrictions” (DFARS 252.227-7017). When doing so, the Offeror shall identify the specific item of technical data (e.g., drawing name and number) associated with the sub-item, sub-component or segregable portion of a process or computer software (e.g., name of software sub-routine that performs a specific function) to which the asserted restriction pertains. The Offeror shall also provide all information required by Section L-4.2.4.3.b. in its Volume II (Technical Volume).

30. Section L-6.3.4.1.6 (Attachment 5: Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation)) of the GPS IIIF Final RFP provided detailed instructions for completing that Section J attachment. In pertinent part, that provision stated that:

d. Complete Table 1 in Attachment 5 in the following manner:

1) Columns 1-3: Leave as-is.

2) Column 4: Fill-in with the word “Unlimited”, “Government Purpose”, “Limited” (for technical data), or “Restricted” (for computer software). (Note that Attachment 5 indicates that some CDRLs require delivery of both technical data and computer software. Under such circumstances, the Offeror shall identify what level of license rights it proposes to deliver to all technical data described in that CDRL and what level of license rights it proposes to deliver to all computer software described in that CDRL.) If the Government has typed the word “Unlimited” into any cell in Column 3 associated with any CDRL the Offeror has identified in its Section K provision entitled “Identification and Assertion of Use, Release, or Disclosure Restrictions” (DFARS 252.227-7017), and the Offeror has provided all the information required by Section L-4.2.4.3.b, then the Offeror shall insert either “Unlimited”, “Government Purpose”, “Limited”, or “Restricted” into the cell associated with that CDRL in Column 4. The Offeror shall propose only one type of license rights for all content required to be delivered as part of that CDRL, except where Attachment 5 expressly states otherwise for CDRLs A006, A007, A027, A032, A058, A082, A114, and A124.

\* \* \*

i. Integrated Data Environment (IDE) Repository. Sections 2.1.2.4 and 3.1.2.4 of Attachment 1 (Statement of Work), will require the awardee to develop and maintain a structure electronic collaborative environment that permits all contractor (and subcontractor) and government personnel the ability to cost-effectively and securely create, manipulate, deposit/upload, retrieve/download, and exchange all data between those personnel created or utilized by those personnel during the period of performance of the GPS II Follow-On Production contract.

1) . . .

2) Appendix B in Attachment 5: Integrated Data Environment (IDE) Repository. The Offeror shall provide the following information in an Appendix to Attachment 5 of its Model Contract so that its proposed Concept of Operations for that environment is documented in enforceable contract [ ] language. In Appendix B to Attachment 5, the Offeror shall discuss the following topics using the following headings:

i) . . .

ii) . . .

iii) Requirements: In this subsection, the Offeror shall discuss the following topics:

\* \* \*

(d) What types of data will reside on the IDE Repository, *e.g.*,

(1) . . .

(2) all data listed on the Data Accession List (CDRL A039),

(3) all data delivered under other CDRLs listed in Exhibit A.

(4) all data utilized in the performance of this contract that is not a CDRL listed in Exhibit A.

(e) This section shall state that all data the Offeror or its

subcontractors deposit/upload into the IDE Repository will be considered “deliverables” when deposited/uploaded into the IDE Repository. . . .

### **C. Pre-Proposal Conference.**

31. On March 2018, LMSSC and Air Force representatives met for a Pre-Proposal Conference. In pertinent part, LMSSC’s summary of that meeting stated that:

- Data Rights
  - Insertion of Section L – Section 4.2.4.3 Criterion 3: Intellectual Property (b.1) was directed toward whether the data or software was a required deliverable not toward whether the contractor was justified in asserting data rights because something was privately funded
  - The RFP language was added to ensure that for all tech data and software LM was delivering with lower license than specified by the Government we had validated that we were only delivering tech data, computer software or computer software documentation described in the DID for that CDRL
  - The Government indicated LM has historically over-provided and encouraged LM to map a specific item asserted with restrictions to a specific paragraph of the DID. If LM were asserting less than the Government asserted rights, LM:
    - Should map the asserted item to a CDRL
    - Dissect and interpret the DID line by line for what the DID is actually requesting
    - Ensure we are not asserting lower level of license rights for data or computer software described in 10 USC Section 2320 (a)(2)(C), DFARS 227.7103-5(a)(2) and (a)(4) through (a)(9), and DFARS 227.7203-5(a)(3) through (6) (e.g., form, fit, function data)
  - The assertion of multiple types of data rights per CDRL is not allowed except as identified

### **D. Source Selection.**

32. On April 16, 2018, LMSSC submitted its GPS IIIF Initial Proposal to the Air Force. Its Model Contract made no changes to the text of the DD Form 1423 for CDRL A032 quoted above from the GPS IIIF Final RFP. Its Model Contract populated the row in Table 1 of Attachment 5 associated with that CDRL consistent with the instructions provided in Section L-6.3.4.1.6.d.2) quoted above by inserting “Government Purpose” as the type of IP license it proposed to grant the Air Force to that portion of CDRL A032 that required the delivery of “**Computer Software**”. That Model Contract also made no changes to the existing text of Tables 1-3 of Attachment 5.



33. Although LMSSC's Model Contract also included a completed DFARS 252.227-7017 (Identification and Assertion of Use, Release, or Disclosure Restrictions)(JAN 2011), that representation did not follow the instructions in sections L-4.2.4.3.1.b.1) and L-6.1 of the GPS IIIF Final RFP quoted above. The reason why is because, as stated in section 4.3.1.1 (p. II-267) of LMSSC's Technical Volume,

[f]or . . . non-commercial technical data, LM confirms we propose only one type of license rights for all content required to be delivered as part of that CDRL item. Since LM does not propose to deliver any CDRL item with less than the minimum needs, no citations or quotations to the applicable CDRL language are required or provided [in LMSSC's completed Section K provision (DFARS 252.227-7017 (Identification and Assertion of Use, Release, or Disclosure Restrictions)], nor are explanations as to why data does not fit within one of the exceptions in 10 U.S.C. § 2320(a)(2)(C), DFARs 227.7103-5(a)(2) and (a)(4) through (a)(9), and DFARS 227.7203-5(a)(3) through (6).

As a result, LMSSC's completed representation in its Model Contract Volume (p. IV-118) included the following entry:

<b>Technical Data or Computer Software to be Furnished with Restrictions*</b>	<b>Basis for Assertion**</b>	<b>Asserted Rights Category***</b>	<b>Name of Person/Entity Asserting Rights ****</b>
MDU Flight Software (Excludes Advanced Phase Meter with Integrity Monitoring (Time Keeping System (TKS) Software)	Developed with mixed funding	Government Purpose Rights	Harris Corporation

34. In accordance with section L-3.7 quoted above, Volume I (Executive Summary) of LMSSC's GPS IIIF Initial Proposal included the following CEO Certification:

16 April 2018

Mr. Roy Lee  
Procuring Contracting Officer  
GPS Directorate  
483 N. Aviation Blvd.  
Los Angeles AFB  
El Segundo, CA 90245

Subject; Solicitation No. FA8807-17-R-0009)

I hereby certify, as CEO of Lockheed Martin Corporation, that the Lockheed Martin Corporation proposal has meet all solicitation



requirements, including but not limited to, all representations and certifications in Section K of the solicitation, and all mandatory technical and Statement of Work (SOW) requirements as outlined in the subject solicitation. Particularly, my signature indicates Lockheed Martin Corporation's acceptance of the terms and conditions of the Model Contract, Statements of Work, and all other attachments – specifically Attachment 5, Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation).

Lockheed Martin Corporation

//s//

Marillyn A. Hewson  
Chairman, President and CEO

35. After the Air Force received LMSSC's GPS IIIF Initial Proposal, it evaluated that proposal. The Air Force did not establish a competitive range or conduct discussions (see FAR 15.306(d)) with LMSSC prior to award regarding the content of that proposal. It did, however, issue clarification questions (see FAR 15.306(a)) to LMSSC, to which LMSSC responded. One clarification question the Air Force posed to LMSSC on May 8, 2018, was Evaluation Notice (EN) OFB-TECH4-014:

The Offeror proposes in Vol IV, Pages 116-120, Section K 252.227-7017 provision to deliver various items of technical data or computer software to the Government with Limited Rights or Restricted Rights, respectively. The majority of the items listed in the Offeror's Section K 252.227-7017 does not seem to identify the required specific items of technical data or software in accordance with the instructions contained in Section L-6.1 of the RFP. The Offeror seems to identify just the items of hardware and does not identify any document titles, revision numbers, or document release dates (for technical data) or software item components/software units/subroutine names/issue dates (for computer software) as required by the instructions contained in Section L-6.1 of the RFP. Additionally, the Offeror aggregates all technical data and computer software to be supplied by it or a subcontractor into a single row – suggesting that the Offeror is proposing to deliver Restricted Rights in technical data and Limited Rights in computer software. [This approach] does not make sense because the term "Limited Rights" only applies to the former and the term "Restricted Rights" only applies to the latter. Please clarify the items listed in Section K provision in accordance with the instructions contained in Section L-6.1 of the RFP.

The Offeror provided, in Vol IV, Pages 589-598, its completed Attachment 5, Table 1 [Rights in Noncommercial Technical Data, Computer Software, and Computer Software Document[ation]]. However[,] it is unclear as to whether the proposed IP rights to noncommercial technical data and computer software described in all CDRLs listed therein remains as stated in the Offeror's submitted Attachment 5, Table 1, The Offeror's completed Section K 252.227-7017 provision proposes various items of technical data and computer software that will be delivered with Limited Rights and Restricted Rights, respectively. Please confirm that proposed items in [the] Section K provision does not alter or reduce the proposed IP rights listed in Attachment 5, Table 1.

36. In response to EN OFB-TECH4-014, LMSSC stated that:

We confirm our proposal followed Section L instructions, and proposed items in Section K do not alter or reduce the proposed IP rights in Attachment 5, Table 1.

The items listed in the Technical Data or Computer Software to be Furnished with Restrictions column of the Section K DFARS 252.227-7017 are specific to and at the level of the technology developed at private expense. Please note the instructions contained in Section L-6.1 of the RFP do not require document titles, revision numbers, or document release dates (for technical data) or software item components/software units/subroutine names/versions/issue dates (for computer software) but instead provides examples (drawing name and number for technical data and name of software subroutine that performs a specific function) as examples of "specific items." Our approach was to provide a concise description of the technology and the assertion associated with the technology. In some cases the technology may be applied in the form [of] technical data (Limited Rights) while in other cases its application may take the form of computer software (Restricted Rights). In each instance where hardware is mentioned, the assertion is tied to the technical data or computer software associated with that hardware.

By listing both Limited and Restricted Rights in the Asserted Rights Category of the table, LMS does not assert that Limited Rights would apply to software or that Restricted Rights applies to technical data. LM is acknowledging, as described above, that the description of the technology includes both technical data and software and that for all the technical data covered by the description Limited Rights are asserted and for all the software covered by the description, Restricted Rights are asserted.

## **E. Relevant Contract Provisions.**

37. On September 14, 2018, the Air Force awarded LMSSC the GPS IIIF contract based upon the content of its GPS IIIF Initial Proposal submission. Section B, CLIN 0011 of the GPS IIIF contract states that “[t]he Contractor shall deliver all rights in data (including technical data, computer software, and computer software documentation) required by Attachment 5 (Rights in Data).” Section B, CLIN 0012 of the GPS IIIF contract states that “[t]he Contractor shall provide data and reports in accordance with Exhibit A, ‘Contract Data Requirements List (CDRL)’”.

38. Section J of the GPS IIIF contract incorporated by reference various Exhibits and Attachments.

39. For example, Exhibit A (Contract Data Requirements List (CDRL) GPS III Follow-On Production)(13 February 2018), Section I (CDRL Instructions), section 6.4 (Submittal Procedures) of the GPS IIIF contract states that “[u]nclassified CDRLs are submitted to the government via TopVue and in accordance with this instruction. . . .”

40. Exhibit A, Section II (Summary CDRL List—CDRLs A001 Through A152) included CDRLs A027 and A032. Due to the feedback LMSSC provided on the draft GPS IIIF RFP described above, BLK 16 of the DD Form 1423 for CDRL A027 states that “[t]his CDRL contains technical data and computer software.”

41. BLK 4 of the DD Form 1423 for CDRL A032 in Exhibit A invokes DI-IPSC-81441A, the Data Item Description (DID) for an SPS. DI-IPSC-81441A states in pertinent part that:

3.1 Executable files. This paragraph shall provide, by reference to or enclosed or otherwise provided electronic media, the executable software for the CSCI, including any batch files, command files, data files, or other software files needed to install and operate the software on its target computer(s). In order for a body of software to be considered a valid copy of the CSCI’s executable software, it must be shown to match these files exactly.

3.2 Source files. This paragraph shall provide, by reference to or enclosed or otherwise provided electronic media, the source files for the CSCI, including any batch files, command files, data files, or other files needed to regenerate the executable software for the CSCI. In order for a body of software to be considered a valid copy of the CSCI’s source files, it must be shown to match these files exactly.

42. Due in part to the feedback LMSSC provided on the draft GPS IIIF RFP described above, BLK 16 of CDRL A032 states that:

This CDRL contains technical data and computer software.

BLK 4: Tailor DI-IPSC-81441A as follows:

1) Replace all references to “computer software configuration item” and “CSCI” with “Software Item” and “SI” respectively.

2) Replace the first two paragraphs in the “Use, Relationship section with the following two paragraphs:

“One or more Software Product Specifications shall be prepared for all software items in the following categories of software (including the software portion of firmware): Space Vehicle flight software and other software used in satisfying, verifying or validating requirements or used in performing supporting operations or sustainment (e.g., training, modeling, simulation, analysis, database support, automatic test equipment, maintenance).

Include, as an appendix to the SPS, a software version description per DI-IPSC-81442A, and replace all references to “computer software configuration item” with “software item”.”

3) At the end of paragraph, “3.2. Source files”, add “The source files shall include all noncommercial computer software, and all commercial item computer software (excluding Commercially Available Off-the-Shelf (COTS) software).”

BLK 5: SOW 2.1.1.6.10.d., 2.2.2.8.a., 2.2.3.8.a, 2.4.3.a, 3.1.1.6.10.d, 3.2.2.8.a., 3.2.8[.]h.

...

BLK 12: Submit 30 CD after completion of each initial SI’s Qualification Testing (SIQT).

BLK 13: Submit 30 CD after completion of each SIQT of subsequent SI builds.

43. Section J, Attachment 1 (Work Breakdown Structure (WBS) and WBS Dictionary GPS Follow-On Production) of the GPS IIIF contract identifies the Navigation Payload Flight Software as WBS Element 1.2.3.8. The “Space Vehicle flight software” described in CDRL

A032 includes the “Navigation Payload Flight Software”, which in turn contains all the SIs that comprise the OBC/TCU/MDU Flight Software source code.

44. Section J, Attachment 2 (Statement of Work (SOW) GPS III Follow-On Production)(March 12, 2018) of the GPS IIIF contract states in pertinent part that:

**2.1 Space Segment Systems Engineering/Program Management**

The contractor shall accomplish the following SE/PM tasks:

\* \* \*

***2.1.1.6.10 Space Vehicle Software***

- a. Develop, provide, and implement a Software Development Plan (SDP) IAW SMC-S-012. Include a deficiency report (DR) plan, software metrics program, integration and verification approach, and a maintainability program for the full software lifecycle. (CDRL A022)

\* \* \*

- d. Establish software product baselines to support code and unit testing. (CDRL A027) (CDRL A032) (CDRL A059)

\* \* \*

***2.1.2.4 Data Management***

Establish and maintain a structured electronic collaborative IDE Repository IAW Attachment 5 to the contract, Appendix B.

\* \* \*

**2.2 Space Vehicle (SV) Design**

The contractor shall design, develop, and qualify an SV design that meets the effectivity 65 requirements of SS-SS-900. (CDRL A010) (CDRL A011) (CDRL A012) (CDRL A047) (CDRL A107)

Specifically, the contractor shall accomplish the following tasks:

\* \* \*

***2.2.2.8 Bus Flight Software***

- a. Develop and qualify the bus flight software detailed design IAW the Software Development Plan, the Software Test Plan, and SMC-S-012 that meets the allocated bus flight software

requirements IAW SS-SS-900 and SMC-S-012. Develop and provide the software planning and design artifacts. (CDRL A025) (CDRL A026) (CDRL A027) (CDRL A029) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034)

\* \* \*

#### ***2.2.3.8 Navigation Payload Flight Software***

- a. Develop and qualify the NPL flight software detailed design IAW the SDP and SMC-S-012 that meets the allocated NPL software requirements IAW SS-SS-900 and SMC-S-016. Develop and provide the software planning and design artifacts. (CDRL A025) (CDRL A026) (CDRL A027) (CDRL A029) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034)

\* \* \*

### **3.2 Space Vehicle**

The contractor shall fabricate, assemble, integrate, test, and deliver SVs in accordance with SS-SS-900, effectivity 65. (CDRL A107) (CDRL A108)

Specifically, the contractor shall accomplish the following tasks:

\* \* \*

#### ***3.2.2.8 Bus Flight Software***

- a. Update, code, test, document, install, integrate, verify, and maintain flight software for performing spacecraft bus functions and conduct formal qualification testing of flight software IAW the Software Development Plan, the Software Test Plan, Descriptions and Procedures, ISO/IEC 15939, and SMC-S-012. (CDRL A022) (CDRL A026) (CDRL A030) (CDRL A031) (CDRL A032) (CDRL A034) (CDRL A114) (CDRL A107)

\* \* \*

#### ***3.2.8 Mission Operations Support***

\* \* \*

- h. Maintain and provide the flight software for on-orbit space

segment assets during the mission operations support period (through SCA of SV32) IAW the Integrated Support Plan and Software Development Plan. (CDRL A031) (CDRL A032).

\* \* \*

45. Section J, Attachment 4 (Compliance and Reference Documents GPS III Follow-On Production) (March 27, 2018) of the GPS IIIF contract invokes SMC-S-012 (Software Development) (January 16, 2015), as a compliance document in Table 1 of that attachment. Appendix D (Product Evaluations) of that Space and Missile Systems Center (now Space Systems Command) standard specifies the requirements and evaluation criteria for product evaluations. Section D.3 of that Appendix includes Table D.3-1 (Products and Associated Evaluation Criteria) that identifies 35 mandatory products and their associated evaluation criteria. Page D-13 of that table includes Item No. 27. Item No. 27 reads as follows:

ID	Product	Evaluation Criteria
27.	Source files  § 5.13.2	<ul style="list-style-type: none"> <li>a. Contains all applicable information in [Software Product Specification] DID.</li> <li>b. Meets SOW, if applicable.</li> <li>c. Meets contract, if applicable.</li> <li>d. Understandable.</li> <li>e. Internally consistent.</li> <li>f. Follows [Software Development Plan].</li> <li>g. Meets delivery requirements.</li> <li>h. All required software is present.</li> <li>i. Shows evidence that the version of the source code exactly matches the version that passed testing.</li> <li>j. Deliverable media accurately labeled.</li> <li>k. Shows evidence that source code exactly matches the specific identified configuration-managed version of the source code.</li> <li>l. Consistent with the software units and data in the “as built” software design.</li> </ul>

46. Section J, Attachment 5 (Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation) of the GPS IIIF contract contains three tables that identify what IP rights LMSSC granted the Air Force (now Space Force) CDRL-by-CDRL-by-CDRL. The only differences in the text between that contained in those tables in the GPS IIIF Final RFP and the GPS IIIF contract, is that LMSSC populated Columns 4 and 5. For example, as populated by LMSSC, Table 1 (Rights in Noncommercial Technical Data, Computer Software, and Computer Software Documentation) of that attachment states in pertinent part that:



Column 1	Column 2	Column 3	Column 4	Column 5
CDRL NO.	DATA ITEM TITLE (SUBTITLE)	Gov't Asserted RIGHTS CATEGORY	Offeror Proposed RIGHTS CATEGORY	PRICE
A027	Software Design Description (SDD)	<b>Technical Data:</b> Unlimited	<b>Technical Data:</b> Unlimited	\$0
		<b>Computer Software:</b> Government Purpose	<b>Computer Software:</b> Government Purpose	\$0
A032	Software Product Specification (SPS) [(Includes Software Version Description) (SVD)]	<b>Technical Data:</b> Unlimited	<b>Technical Data:</b> Unlimited	\$0
		<b>Computer Software:</b> Government Purpose	<b>Computer Software:</b> Government Purpose	\$0

47. Section J, Attachment 5(d)(2) of the GPS IIIF contract stated that

[s]ince some CDRLs (i.e., CDRLs A006, A007, A034, A058, A114) require the delivery of both technical data and contract administration information, different license rights will apply to those portions of those CDRLs that require the delivery of technical data than those portions that require the delivery of contract administration information. Under such circumstances, the Contractor shall affix all restrictive markings required by Tables 1 and 3 to the cover sheet of the CDRL, mark each subsequent sheet of data with an abbreviated marking(s) to indicate the applicable restrictive rights assertion(s), and refer to the title/cover page for additional information. . . .

48. Attachment 5, Appendix B of the GPS IIIF contract describes the IDE-R LMSSC agreed to establish and maintain during contract performance in accordance with section 2.1.2.4 of the GPS IIIF SOW. Appendix B, section 1, states that the purpose of the IDE-R is to describe the structured electronic collaborative environment LMSSC will be develop and maintain to permit all Lockheed Martin (LM), LM subcontractor, and Government personnel to cost-effectively, securely, create, manipulate, deposit, upload, retrieve/download, and exchange all data between those personnel created or utilized by those personnel during the period of performance of the GPS IIIF contract. That section also states that the IDE-R is one subdivision of the GCEF enclave. Section 2 of that Appendix states the IDE-R will be hosted in SharePoint within the GCEF, and that the GCEF is a collection of tools and data repositories hosted in multiple LM environments.

49. Section 3(d) of Appendix B of Attachment 5 states that examples of the types of data that will reside in the IDE-R subdivision of the GCEF enclave include “Contract Data Requirements List (CDRL) deliverables, Exhibit A”. Section 6(c) of that Appendix states that the IP license rights the Government will acquire to all data delivered pursuant to a CDRL listed in Exhibit A that is deposited/uploaded into the IDE-R are described in Attachment 5 Tables 1-3 and/or 1-4.

**F. Relevant post-award activities.**

50. On January 17, 2019, the parties incorporated by reference into the GPS IIIF contract LMSSC's revised Section K DFARS 252.227-7017 representation via bilateral Modification P00009. In pertinent, part, that representation stated that:

<b>Technical Data or Computer Software to be Furnished with Restrictions*</b>	<b>Basis for Assertion**</b>	<b>Asserted Rights Category***</b>	<b>Name of Person/Entity Asserting Rights ****</b>	<b>Associated CDRL</b>
MDU Flight Software (Excludes Advanced Phase Meter with Integrity Monitoring (Time Keeping System (TKS) Software)	Developed with mixed funding	Government Purpose Rights	Harris Corporation	A027, A032

Although the remaining 25 entries in LMSSC's completed modified DFARS 252.227-7017 representation similarly mapped "associated CDRLs" to which it or any of its subcontractors "asserted rights" in noncommercial technical data or computer software to be delivered to the Government, none of those remaining entries mapped any additional "asserted rights" to CDRLs A027 or A032. In other words, neither LMSSC nor Harris asserted any restrictions on the Air Force's ability to use, release, or disclosure computer software pertaining to the Advanced Phase Meter with Integrity Monitoring (Time Keeping System (TKS) Software) to be delivered under CDRLs A027 and A032.

51. On April 10, 2020, LMSSC electronically submitted via TopVu its GPS IIIF Software Development Plan (SDP) (CDRL A022) (Document No. 3GPS-N-07-0101-FOP Rev. B). deliverable states in pertinent part that:

**5.13.2 Preparing Source Files**

The final versions of all source code files are gathered together from the GPS IIIF Software Development Library and transferred to CM control as per the Configuration Management Plan. Approved classified material handling provisions are employed for the classified source code and data.

The source code files include any batch, command, data, test, support, and all other files needed to generate the executable

development and support software using the same programming language compilers.

\* \* \*

### 5.14.1 Configuration Identification

\* \* \*

The source code labeling convention is left to the SI developer to define. Each source code configuration management tool automatically assigns unique revision numbers to each source file. Source code labels are used in the source code configuration management tool to create a snapshot of a set of source file versions that are related, such as all source code file versions targeted for an engineering build or a formal release candidate build. When such labels are used, they should be unique for each formal build release and identified in the build documentation.

\* \* \*

### B.3.9 Files and File Formatting

\* \* \*

Each header file must `#include` the files it needs to compile, rather than forcing users to `#include` the needed files. `#includes` are limited to what the header needs; other `#includes` should be placed in the source file. If supported by the compiler, `#pragma once` can be used in lieu of or in addition to the above include guards.

Header files must not generate object code.

The source files use a source file header placed at the beginning of the file. The file headers contain the directives for providing the essential (minimum information) that needs to be captured for the respective source code. The file headers can be modified with special delimiters/tags to allow the automated generation of source code documentation produced by related tools (i.e., doxygen). The file headers may also contain references to other sources of information (i.e., link to a configuration management library that contains the relevant source code change history). In addition to file headers there are also class headers and function headers.

\* \* \*

### B.3.10.2 Source File Organization

The statement groupings within the source file are:

```
<Source file header>
<#includes>
<Global variable declarations>
<Global within file constant definitions>
<Global within file variable declarations>
<Static function prototypes>
<Source Code>
```

Source files must not #include unnecessary include [sic] files.

### B.4 C# Coding Standards

\* \* \*

#### INTRODUCTION

In order to develop applications both quickly and reliably, a development team must practice a common set of coding standards. By writing code in a **consistent** manner, emphasizing the importance of readability, write ability, proper refactoring and advancement of frameworks, a development team will be able to lower defect rate and increase overall productivity. Also, in following the coding standards, you will reduce risk and increase predictability.

\* \* \*

#### General structure of a C# Program (C# Programming Guide)

C# programs can consist of one or more files. Each file can contain zero or more namespaces. . . .

\* \* \*

#### Unit Testing standards

Source code should not be modified for unit testing except when friending is needed between the source code assembly and corresponding unit tests assembly. Friending is necessary due to the fact that private accessor approach is deprecated in recent Visual Studio versions.

Information about friending is documented at  
<https://docs.microsoft.com/enus/dotnet/standard/assembly/friend>

To perform friending as an example, modify the original C# source file with

`using System.Runtime.CompilerServices;`

`[assembly:  
 InternalsVisibleTo("NAME_OF_UNIT_TEST_ASSEMBLY")]`

before the class declaration, replacing  
**NAME\_OF\_UNIT\_TEST\_ASSEMBLY** with the name of the assembly the unit test code compiles to.

In order to access non-public methods, or get or set non-public fields or properties of a class, use  
 PrivateObject (for object instances), or use PrivateType for static members.

Examples here: <https://kajbonfils.com/2012/10/testing-private-members-with-privateobject-andprivatetype/> [italics added, boldface and color in original]

52. On April 26, 2021, LMSSC's Contracts Manager notified me by email that "the submission approach for IIIF is different than GPS III due to the fixed-price nature of the contract", and that whenever that CDRL would be ready for delivery, any source files would be made "available" to the Government (and supporting/reference material would be available at a specified hyperlink (<https://space-us.external.lmco.com/sites/gps3fnonCDRL/NonCDRL/Forms/AllItems.aspx>)).

53. The next day, April 27, 2021, I sent an email to LMSSC's Contracts Manager inquiring whether (1) LMSSC was stating that source code was not a CDRL deliverable, and (2) supporting and reference material would only be made "available" to the Government. Three hours later, I sent a follow-up email to LMSSC's Contracts Manager inquiring precisely what she meant when she stated LMSSC would only make "available" the source code required to be delivered as part of CDRL A032 by asking whether the Government can download that software—or "does it mean look but don't touch?"

54. Instead of directly responding to these specific questions, the next day LMSSC's Contracts Manager responded that, for GPS IIIF CDRLs and respective DIDs where the "by reference" language is included, LMSSC's general approach is to:

1. Deliver the formal deliverable marked with appropriate data rights (Limited, Govt Purpose, [U]nlimited) in compliance with contractual requirements.

2. Provide supporting, non-deliverable information through the GCE-F which will be marked with proprietary markings (LMPI, TPPI, etc), if applicable.

To my knowledge, supporting information provided to the Govt via the GCE-F SharePoint can be viewed, downloaded, used, etc. within the bounds of any proprietary marking.

55. On June 23, 2021, I sent a letter to LMSSC's Contracts Manager stating that based upon this email exchange, I was unsure whether LMSSC had the same understanding with regard to its responsibilities under the GPS IIIF contract as that possessed by the Space Force. My letter consisted of a 14 single-spaced page analysis that concluded that LMSSC is required to deliver

- All technical data and computer software described in CDRL A032, including all Flight Software source and executable code—including Bus Flight Software and Navigation Flight Software (*e.g.*, OBC/TCU/MDU Flight Software source code) with GPR, and all technical data described in that CDRL with UR.
- All “supporting non-deliverable information” computer software associated with the creation of CDRL A032 that LMSSC or its subcontractors may upload/deposit into the IDE-R with GPR, and all “supporting non-deliverable information” technical data associated with the creation of that CDRL that LMSSC or its subcontractors may upload/deposit into the IDE-R with UR. No “proprietary” restrictive markings may be affixed to that IP.

My letter also explained why source code was a deliverable under the GPS IIIF contract, and why it would be impossible for LMSSC to comply with SMC-S-012 if source code would not reside within source files.

56. On July 29, 2021, LMSSC's Contracts Manager replied to my letter with a 2-page response. That response asserted that LMSSC was not contractually required to deliver source code “but has agreed to make the source code available with appropriate markings.” In contrast to the single Pre-Proposal Conference summarized above, the response asserted that the parties had had “extensive” pre-award discussions on this point. The response focused on the differences in language between the GPS IIIF contract and its predecessor contract (GPS III) the Air Force awarded LMSSC in May 2008, and also focused on the title of DI-IPSC-81441A. The response asserted that DI-IPSC-81441A only required LMSSC to deliver narrative software specifications (*i.e.*, technical data but not computer software)—notwithstanding the response admitted that the GPS IIIF contract had modified that text in that DID. The response asserted that that DID only requires the contractor to make available

“by reference” or “otherwise provided” (but not *delivered*) the files necessary to complete the regeneration and verification of the software in accordance with the Software Product Specification[;] in doing so, however, DI-IPSC-81441A does not convert those supposed references into independent contract Deliverables [emphasis in original].



The response did not respond to the point I made in my June 23, 2021 letter regarding why it would be impossible for LMSSC to comply with SMC-S-012 if source code would not reside within source files.

57. LMSSC's response also stated that:

. . . during the proposal phase for the GPSIII[ ]F Contract, the Government required the Contractor to assert only a single data rights assertion for each CDRL. The Government levied this requirement even though each CDRL could potentially contain multiple technical data and software elements, and certainly would contain multiple data elements under the Government's current expansive reading of A032. LM Space understood during the proposal phase that the Government did not intend its Request For Proposal to violate 10 U.S.C. § 2320(H) by requiring the Contractor to relinquish data rights, which is the effect of requiring a single data rights assertion per CDRL. [footnote omitted] If the Parties had intended to include multiple software deliverables within the CDRL, it is inconceivable that they would have used a single data rights assertion approach. LM Space construed the CDRLs narrowly to meet the RFP requirements by making files available through the GCE-F rather than delivering those files through the IDE-R. LM Space discussed this issue with the Government in Reference (b) and Reference (c), and the Government understood that LM Space would provide via CDRL delivery only what is required in the DID. The Government further understood that such deliverables would reference proprietary data to be provided only via proprietary databases allowing the Government to confirm the analysis against the design. This approach was encouraged by the Government, who acknowledged that LM Space had historically over-provided data. Further the Government encouraged LM Space to map a specific item asserted with restrictions to a specific paragraph of the DIDs.

58. On December 7, 2021, LMSSC sent a follow-up response to me. That response stated that LMSSC "now" understands the USSF's requirement is for "delivery" of source code under CDRL A032 "and not just providing the source code." Based upon this "new information and in accordance with DFARS 252.227-7014[(e)(3)]", LMSSC then sought to make additional assertions pertaining to computer software (based upon alleged development exclusively at private expense such that the USSF would only be entitled to receive Restricted Rights (RR) to that computer software), and proposed changes to the text of CDRL A032. LMSSC's response then proposed two options: (1) The Government issue a request for proposals to it requesting delivery of source code associated with CDRL A032 with Government Purpose rights. (2) The Government execute a specifically negotiated license to modify the standard license rights granted to the Government (RR) with each asserting party. The only changes LMSSC proposed to CDRL A032 were to replace the word "provide" with the word "deliver". LMSSC's proposed



new asserted restrictions stated the Government would only acquire RR to the Advanced Phase Meter with integrity Monitoring (Time Keeping System (TKS) Software and Source Code, the Advanced Phase Meter with integrity Monitoring (Time Keeping System (TKS)) Firmware, the MDU Digital Waveform Generator (DWG) Software and Source Code, the MDU TKS Software and Source Code, the MDU Frequency Synthesizer Software and Source Code, and the TCU Flight Software (TCU FSW) Version 2.2.1A Source Code.

### III. DISCUSSION.

CDRL A032 requires the delivery of computer software source code. Specifically, that CDRL invokes DI-IPSC-81441A, paragraph 3.2 of which requires LMSSC “provide, by reference to enclosed or otherwise provided electronic media” source files. As discussed below, “source files” contain “source code”. Moreover, CDRL A032 stated that the “source files” must include “all noncommercial computer software, and all commercial item computer software. . . .” Notwithstanding this plain language, however, LMSSC asserts that what that CDRL requires be provided to the Space Force is in fact *not* required to be provided to the Space Force. As a result, LMSSC asserts that it will only make MDU Flight Software source code “available” to the Space Force by some means other than that required by the contract. This is illogical and contrary to the express contractual requirement.

#### A. The GPS IIIF Contract Requires LMSSC to Deliver Computer Software.

Paragraph 3 of LMSSC’s July 29, 2021 letter asserted that, when read as a whole, DI-IPSC-81441A paragraph 3.2 requires the contractor to make available “by reference” or “otherwise provide[ ] (but not *delivered*) the files necessary to complete the regeneration and verification of the software in accordance with the Software Product Specification.” (Finding 57). LMSSC’s assertion is belied by historical evidence going back as far as July 11, 1967.

*First*, the Department of Defense has no exclusive method for specifying its data needs in contracts. The DFARS uses various synonyms to describe how the DoD obtains possession (physical or electronic) of technical data and computer software, such as:

- “furnish” (DFARS 227.7102-1(b)(1), DFARS 227.72-1(c)(1))
- “furnished with restrictions” (DFARS 227.7103-1(b)(4), DFARS 227.7203-1(b)(4))
- “should be provided to the Government” (DFARS 227.7103-10(a)(1), DFARS 227.7203-10(a)(1))
- “deliver, furnish, or otherwise provide” (DFARS 227.7103-10(b)(2), DFARS 227.7203-10(b)(2))
- “delivered or otherwise provided under a contract” (DFARS 227.7103-10(c)(1), DFARS 227.7203-10(c)(1))
- “should be furnished to the Government” (DFARS 252.227-7013(e)(2), DFARS 252.227-7014(e)(2))
- “delivered or otherwise furnished to the Government” (DFARS 252.227-7013(f)(2) & (3), DFARS 252.227-7014(f)(2))
- “furnished or to be furnished under this contract” (DFARS 252.227-7013(h)(1), DFARS 252.227-7014(h)(1))

- “delivered or otherwise furnished to the Government” (DFARS 252.227-7013(h)(2), DFARS 252.227-7014(h)(2))
- “to be obtained from a subcontractor or supplier to the Government” (DFARS 252.227-7013(k)(2), DFARS 252.227-7014(k)(1))
- “to be delivered” and “should be furnished” (DFARS 252.227-7017(b) and (c))

The word in paragraph 3.2 of DI-IPSC-81441A upon which LMSSC focuses (“provide”) aligns with these DFARS provisions and clauses. Based upon the paramount rule of contract interpretation that states the plain meaning of the contract prevails, it is irrelevant what synonym the GPS IIF contract may have affixed to transfer of possession of GPS IIF OBC/TCU/MDU Flight Software source code from LMSSC to the Government—be it “delivered”/“deliverable”,<sup>1</sup> “furnished”,<sup>2</sup> or “otherwise provided”.<sup>3</sup> What matters is that the GPS IIF contract requires LMSSC to transfer possession of that IP content to the Government in the manner required by that contract.

*Second*, over three decades ago, the Government Accountability Office held that “[i]t is . . . clear that DD Form 1423 is used to assist in defining delivery obligations. . . .” *Varian Associates, Inc.—Reconsideration*, B-236238.2, June 28, 1990, 90-1 CPD ¶ 595 at 4. Over half a century ago, the Armed Services Procurement Regulation used the word “delivered” and “furnishing” to describe the use of a DD Form 1423. 32 C.F.R. (Armed Services Procurement Regulation (ASPR)) §§ 3.807-12(b), 16.815, 32 Fed. Reg. 10157, 10160, 10173-10174 (July 11, 1967)(emphasis added). By definition, therefore, anything included in an untailored or tailored DD Form 1423 (*e.g.*, CDRL A032) is a “deliverable” and must be “furnished” to the Government.

Paragraph 3 of LMSSC’s letter of July 29, 2021 asserted that CDRL A032 does not require the delivery of any computer software. (Finding 56). LMSSC is misinformed.

For example, paragraph 3 of LMSSC’s July 29, 2021 letter asserted that a helpful starting point in determining the purpose and scope of CDRL A032 is the title of DI-IPSC-81441A incorporated by reference by the DD Form 1423—Software Product *Specification* (SPS)(*i.e.*, technical data that can be printed out)—that requires the delivery of that CDRL to the Government. (*Id.*). I respectfully disagree. It is a fundamental rule of contract interpretation that general terms cannot override specific terms. What is a helpful starting point is not the title of that DID but rather the specific tailored terms of that DID—tailoring to which LMSSC agreed

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<sup>1</sup> See, *e.g.*, *Black’s Law Dictionary* 541 (11<sup>th</sup> ed. 2019)(defining “delivery” as “**1.** [t]he formal act of voluntarily transferring something; esp. the act of bringing goods, letters, etc. to a particular person or place. **2.** The thing or things so brought and transferred”); *Webster’s Third New International Dictionary of the English Language Unabridged* 597 (1993) (defining “deliverable” as “suitable for, ready for, or in condition for delivery usu. immediately”).

<sup>2</sup> *Webster’s*, *supra*, note 1 at 924 (defining “furnished” as “*adj* [ME *furnisshed*, fr. past part. of *furnisshen*] 1 : provided with essentials : EQUIPPED”).

<sup>3</sup> *Id.* at 1827 (defining “provided” as “*adj* [fr. past part. of *provide*] . . . **2.** Supplied with necessities: EQUIPPED, FURNISHED”).

when it submitted its GPS IIIF Initial Proposal to the Government quoted above that became the GPS IIIF contract.

Paragraph 3 of LMSSC's July 29, 2021 letter also asserted that, since the statement in the Use/Relationship paragraph of DI-IPSC-81441A states the SPS can be used to order executable software and/or source files, that language is mere language of futurity which means that DID does not require delivery of source files (*i.e.*, source code). But as that letter admitted, and as demonstrated above, CDRL A032, BLK 4, Item 2, replaced that language in its entirety with the following text:

One or more Software Product Specifications (SPS) shall be prepared for all software items in the following categories of software (including the software portion of firmware): Space Vehicle flight software and other software used in satisfying, verifying or validating requirements or used in performing supporting operations or sustainment (e.g., training, modeling, simulation, analysis, database support, automatic test equipment, maintenance).

(Finding 42).

In addition, paragraph 3 of LMSSC's July 29, 2021 letter asserted that DI-IPSC-81441A only requires the delivery of "narrative software *specifications*, not to Deliver *software*." (Finding 56). As demonstrated by the DID itself, the tailoring of that DID invoked in CDRL A032, and other relevant provisions of the GPS IIIF contract, that is not the position LMSSC took prior to and when it submitted its GPS IIIF Initial Proposal that became the GPS IIIF contract.

DI-IPSC-81441A does not just describe "specifications" (*i.e.*, technical data only)—it also describes "executable files" and "source files". (Finding 41). More specifically, as explained and supported by the public domain sources quoted below, MIL-STD-498 discussed below, SMC-S-012 quoted above (finding 45), and LMSSC's GPS III SDP quoted above (finding 51), paragraph 3.2 of that DID requires the delivery of source code that resides in "source files". That is why Department of the Air Force Pamphlet (DAFPAM) 63-128 (Integrated Life Cycle Management)(February 3, 2021), paragraph 11.5.1.9 states that, when determining what IP deliverables a program office should acquire, a

starting point for most weapon systems is to acquire [; e.g., c]omputer software (source and executable code) and computer software documentation (*e.g.*, Software Product Specification).

Significantly, LMSSC's July 29, 2021 letter failed to cite to an equivalent authoritative source it or its parent corporation has ever issued that states the SPS does *not* require the delivery of source code notwithstanding that page 8 footnote 7 of my June 23, 2021 letter specifically brought the existence of DAFPAM63-128 to LMSSC's attention. And as demonstrated above, the word "provided" is synonymous with the word "furnished" and "delivered".

Prior to release of the GPS IIIF Final RFP, LMSSC carefully scrutinized the DD Form 1423s in Exhibit A (Contract Data Requirements List) and Attachment 5 (Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation)) of the draft GPS IIIF RFP. The reason why LMSSC did so was to bring to the Air Force's attention various inaccuracies LMSSC perceived existed in those documents.

In one case described above (finding 7), LMSSC's review was so exacting that it focused on specific *sub-sub-paragraphs* of SMC-S-012 invoked by a tailored DID incorporated by reference into CDRL A058. The reason why LMSSC did so is because it wanted to ensure the GPS IIIF Final RFP and thus the resulting contract would properly map IP content in that deliverable to the appropriate tables in Attachment 5 that defined two different types of mutually-exclusive IP license rights associated with various parts of that IP deliverable: One type of IP license that would govern parts of that CDRL that contained noncommercial technical data (Table 1), and a different type of IP license that would govern other parts of that CDRL that contained contract administration information (Table 3).

When performing a similar review with respect to CDRL A027, LMSSC stated that the draft GPS IIIF RFP was incorrect: Since LMSSC believed that portions of that CDRL described computer software, LMSSC proposed very specific changes to both the DD Form 1423 and Attachment 5 in order to bring the text of that CDRL into alignment with reality (Findings 2-3). As a result, the GPS IIIF Final RFP and the GPS IIIF contract states that CDRL requires delivery of two different types of IP content (technical data, computer software), and thus LMSSC granted the Space Force a different type of IP rights to the former (UR) than it did to the latter (GPR). (Findings 4, 24, 46).

But when performing that review with respect to the very CDRL LMSSC now claims does not require the delivery of computer software (A032), LMSSC recommended only that the Air Force modify BLKs 12 and 13 of that DD Form 1423. (Finding 5). In other words, LMSSC proposed no changes to other parts of that DD Form 1423 that describe required IP content—and that expressly state multiple times that CDRL includes “computer software”.

For example, the first sentence in BLK 16 of the DD Form 1423 for CDRL A032 in the draft GPS IIIF RFP stated that “[t]his CDRL contains technical data and computer software” (finding 20)—just like LMSSC recommended the DD Form 1423 for CDRL A027 feature. (Findings 2-3). That sentence remained unchanged in the DD Form 1423 for CDRL A032 GPS IIIF Final RFP (finding 20), and it is found in the GPS IIIF contract to this very day. (Finding 42). Yet when commenting on the draft GPS IIIF RFP, LMSSC did not recommend the Air Force strike-out the phrase “and computer software” in that first sentence in BLK 16 of the DD Form 1423 for CDRL A032 to be consistent with its current position that that CDRL does not require the delivery of computer software. (Finding 5). Nor did LMSSC strike-out the phrase “and computer software” that first sentence before submitting its GPS IIIF Initial Proposal to the Government to be consistent with its current position that that CDRL does not require the delivery of computer software. (Findings 20, 32).

As another example, Item No. 3 in BLK 16 of CDRL A032 that tailored DI-IPSC-81441A of the draft GPS IIIF RFP stated that

“3) At the end of paragraph, ‘3.2. Source files’ [of DI-IPSC-81441A], add ‘The source files shall include all noncommercial computer software, and all commercial item computer software (excluding Commercially Available Off-the-Shelf (COTS) software.’”

That sentence remained unchanged in the GPS IIIF Final RFP and it is found in the GPS IIIF contract to this very day. (Findings 20, 42). Yet when commenting on the draft GPS IIIF RFP LMSSC did not recommend the GPS Directorate strike-out this sentence that stated that source files delivered as part of this CDRL must include “computer software” to be consistent with its current position. Nor did LMSSC strike-out that sentence in BLK 16 before submitting its GPS IIIF Initial Proposal to the Government to be consistent with its current position. (Findings 20, 32).

As yet a third example, as stated above LMSSC’s comments on the draft GPS III RFP’s DD Form 1423s in Exhibit A were inextricably tied to the IP rights offerors would grant the Air Force described in Attachment 5, Table 1. (Findings 2-3, 7, 11). That table stated that the Government asserted it would be entitled to acquire GPR to the **“Computer Software”** to be delivered under CDRL “A032”, “Software Product Specification (SPS) (Includes Software Version Description)”. (Finding 24). Yet when commenting on the row associated with CDRL A032 in Attachment 5, Table 1, LMSSC did not recommend the Air Force strike-out the **“Computer Software”** cell in Column 4 associated with CDRL A032 (finding 5)—even though it stated that same Table “should be updated to include Government Purpose Rights for Software contained in CDRL A027.” (Findings 2-3). Nor did LMSSC insert “Not Applicable” in the **“Computer Software”** cell in Column 4 associated with CDRL A032 quoted above when it submitted its GPS IIIF Initial Proposal to the Government in response to the GPS IIIF Final RFP, (findings 20, 32), to be consistent with its current position that CDRL A032 does not require the delivery of computer software.

The level of scrutiny LMSSC applied to its review of Exhibit A and Attachment 5 of the draft GPS IIIF RFP—including the DD Form 1423 for CDRL A032—speaks for itself. Given that level of extraordinary scrutiny, I find it “inconceivable”—to use LMSSC’s expression as stated in its July 29, 2021 letter—that LMSSC would have kept silent prior to award had it believed what it now asserts is the case (*i.e.*, that CDRL A032 does not require the delivery of “computer software”). Based on these facts, I conclude that LMSSC’s current position is inconsistent with its pre-award conduct.

As discussed above, after award the parties incorporated into the GPS IIIF contract LMSSC’s a modified version of completed DFARS 252.227-7017 (Identification and Assertion of Use, Release, or Disclosure Restrictions) representation via Modification P00009. (Finding 50). That version stated that “Harris Corporation” asserted the Government would acquire “Government Purpose Rights” to the “MDU Flight Software (Excludes Advanced Phase Meter with Integrity Monitoring (Time Keeping System (TKS) Software)”. (*Id.*). When making all assertions in this modified representation, LMSSC added an extra column to the existing table entitled “Associated CDRL.” (*Compare* finding 33 *with* finding 50.). In other words, LMSSC “mapped” CDRLs A027 and A032 to that asserted restriction.



As stated above, DFARS 252.227-7017 only requires offerors to assert restrictions with respect to technical data or computer software “to be delivered” or “furnished” to the Government. So by using the phrase “software” relative to MDU Flight Software in this representation, LMSSC and L3-Harris admitted that CDRL A032 required LMSSC to “deliver” that “software” to the Air Force—else there would have been no need for it to make an assertion with respect to a so-called “non-CDRL” deliverable. Again, it is “inconceivable” that LMSSC and Harris did not know and understand precisely what they were doing when they took that action of their own volition.

In summary, LMSSC’s interpretation of the GPS IIIF contract violates yet another principle of contract interpretation—that interpretation does not give meaning to all parts of the contract cited above. Instead, LMSSC’s interpretation leaves portions of that contract useless, inexplicable, void, and superfluous. The pre-award evidence proves that LMSSC knew that the GPS IIIF contract required it to deliver noncommercial computer software to the Government as part of CDRL A032. That evidence does not support LMSSC’s position that DI-IPSC-81441A only requires the delivery of “specifications” and not delivery of “software”.

**B. Since Source Files Include Source Code, LMSSC Is Required To Deliver All GPS IIIF Space Vehicle Noncommercial Source Code, Including OBC/TCU/MDU Flight Software Source Code.**

LMSSC’s July 29, 2021 letter asserts that the term “source files” in DI-IPSC-81441A paragraph 3.2 does not include “source code”. LMSSC is mistaken.

**1. Trade usage.**

The term “source files” is a well-understood term of art in computer science. Footnote three of my letter of June 23, 2021 to LMSSC identified various internet sources that support my conclusion that the term “source file” means the contents of each file wherein source code is located. In other words, a “source file” is a piece of “source code” saved in a computer system in a particular format. For ease of reference, I restate those sources below—which LMSSC’s letter to me of July 29, 2021 did not address:

- “The source code which constitutes a program is usually held in one or more text files stored on a computer’s hard disk; usually these files are carefully arranged into a directory tree, known as a source tree. . . . The source code for a particular piece of software may be contained in a single file or many files. . . . Moderately complex software customarily requires the compilation or assembly of several, sometimes dozens or maybe even hundreds, of different source code files.” [https://en.wikipedia.org/wiki/Source\\_code](https://en.wikipedia.org/wiki/Source_code) (last visited November 17, 2021)
- “Source code is the source of a computer program. It contains declarations, instructions, functions, loops and other statements, which act as instructions for the program on how to function. Programs may contain one or more source code text files. . . . \* \* \* [L]arge programs frequently reference hundreds or thousands of files. . . . If there are many source files, the program may be organized into

different sections. If a single file contains all the program's variables and functions, it can be hard to locate specific sections of the code."

<https://www.techopedia.com/definition/547/source-code> (emphasis added)(last visited November 17, 2021)

- "[S]mall programs may use only one source code file, while larger programs may reference hundreds or even thousands of files. Having multiple source files helps organize the program into different sections. Having one file that contains every variable and function can make it difficult to locate specific sections of the code." <https://techterms.com/definition/sourcecode> (emphasis added)(last visited November 17, 2021)
- "A **source program** is a text file that contains instructions written in a high level language. It can not be executed (made to run) by a processor without some additional steps. A source program is also called a *source file*, *source code*, or sometimes, just *source*." [https://chortle.ccsu.edu/Java5/Notes/chap04/ch04\\_9.html](https://chortle.ccsu.edu/Java5/Notes/chap04/ch04_9.html) (emphasis in original)(last visited November 17, 2021)
- "When you start creating programs in this class, you will be creating source code. Source code is saved in a simple text file called a source file." [https://eecs.oregonstate.edu/ecampus-video/CS161/template/chapter\\_1/explore-whatprogram.html](https://eecs.oregonstate.edu/ecampus-video/CS161/template/chapter_1/explore-whatprogram.html) (last visited November 17, 2021)

The statements made in these sources available on the internet are consistent with those found in computer science dictionaries. Consider the following definition of "source file": "a program written in source language, which is then converted to machine code by a compiler." S.M.H. Collin, *Dictionary of Computing* 311 (5<sup>th</sup> ed. 2004). That dictionary also defines "source language" as "a language in which a program is originally written" and "a language of a program prior to translation". *Id.* Now consider the following definition of the term "source code" from another authoritative source published by Oxford University Press:

The form of a program that is input into a \*compiler or \*translator for conversion into equivalent object [(i.e., executable)] code. *See also* CODE.

John Daintith and Edmund Wright, *A Dictionary of Computing* 477 (6<sup>th</sup> ed. 2008).

What these authoritative sources say is that a "source file", as that term is used in DI-IPSC-81441A paragraph 3.2, must contain "source code" because

- "source files" are input into a "compiler" for conversion into equivalent "machine code" (i.e., "object"/executable code), and
- it is impossible to "regenerate the executable software for the CSCI" as that phrase is used in that section of that DID unless one in physical possession of the source code.

Moreover, LMSSC's July 29, 2021 letter completely disregarded the fact that paragraph 3.2 of DI-IPSC-81441A states that the "source files" for the CSCI must include



any batch files, command files, data files, or other files *needed to regenerate the executable software for the CSCI*. In order for a body of software to be considered a valid copy of the CSCI's source files, it must be shown to match these files exactly [emphasis added].

(Finding 41) (emphasis added). This italicized text begs the question: if LMSSC had no intent to deliver source code under CDRL A032 prior to award, what type of software did LMSSC intend to deliver to comply with that text? The answer to that question cannot be “executable code”, because section 3.1 of that DID requires delivery of “executable files”. So by process of elimination, LMSSC must have intended to deliver “source code” to the Space Force under CDRL A032. LMSSC's position to the contrary renders the italicized text quoted above meaningless and superfluous—because one must have possession of “source code” in order to “regenerate” “executable” code.

Further support is found in MIL-STD-498 (Software Development and Documentation) (December 5, 1994). Specifically, section 5.12.1 of that military standard specifies how the developer is supposed to prepare the “executable software” and refers the reader to the “executable software section of the Software Product Specification (SPS) DID. . . .” In a similar manner, section 5.13.2 of that military standard specifies how the developer is supposed to prepare the “source files” and refers the reader to the “source file section of the Software Product Specification (SPS) DID. . . .” MIL-STD-498, Appendix D, Figure 6 (Software products and associated evaluation criteria), Item No. 24.h (Source Files), states that “all required software is present” in “source files”. “All” means “all”, not “some”, “most”, etc., etc. Therefore, all required source code must reside within source files. Finally, Appendix G, Figures 9 through 12, of that military standard state that in order to “Prepare for S[oftware] T[ransition], one has to have both the “Executable S[oftware]” and the “Source files”.

In short, just as anyone in the computer science industry would know even before they read MIL-STD-498 what the terms “file”, “software”, “code”, “source”, and “executable” mean, they would understand that “source file” means “source code file”. They would also know that the only practical way to convey source code of any size is as a file—hence the term “source files”.

## 2. Contract terms.

Sections 2.2.2.8.a and 2.2.3.8.a of the GPS IIIF contract's SOW requires that LMSSC develop and maintain GPS IIIF space vehicle software in accordance with SMC-S-012. (Finding 45). SMC-S-012, Appendix D, Section D.3, Table D.3-1, ID No. 27, describes the relationship between “source files” and “source code”:

- “All required software is present” in “Source files”,
- “Source files” must “Show[ ] evidence that the version of the source code exactly matches the version that passed testing[,]” and

- “Source files” must “Show[ ] evidence that source code exactly matches the specific identified configuration-managed version of the source code.”

(Finding 45).

LMSSC’s July 29, 2021 letter that responded to my June 23, 2021 letter did not address the relevance of SMC-S-012, Appendix D, Table D.3-1, ID No. 27 to the issue of whether “source files” as that term is used in DI-IPSC-81441A paragraph 3.2 includes “source code”. (Findings 45, 56). My letter correctly stated that if “source code” would not reside within “source files”, it would be impossible for anyone to perform the validation checks that must be performed on that source code required by SMC-S-012, Section D.3, ID No. 27.” (Finding 55). LMSSC’s letter did not respond to that point. (Finding 56).

In short, when it submitted its Model Contract as part of its GPS IIIF Initial Proposal that became the GPS IIIF contract, LMSSC agreed that “source files” include “source code”.

### **3. LMSSC’s post-award conduct.**

On April 10, 2020, LMSSC submitted its GPS IIIF Software Development Plan (SDP) (CDRL A022) to the Space Force. (Finding 51). Section 2.1.1.6.10.a of the GPS IIIF SOW stated that LMSSC shall develop, provide, and implement an SDP in accordance with SMC-S-012. (Finding 44). Section 5.13.2 of that SDP states that when preparing source files, the final versions of all “source code files” are gathered together from the GPS IIIF Software Development Library; those “source code files” include any batch, command, data, test, support, and all other files needed to generate the executable development and support software using the same programming language compilers.” (Finding 51).

Section 5.14.1 of that SDP stated that source code labels are used for configuration purposes in the source code configuration management tool to create a snapshot of a set of source file versions that are related, such as all “source code file” versions targeted for an engineering build or a formal release candidate build. (*Id.*). Section B.3.9 of that SDP stated that for file formatting purposes, each header file must `#include` the files it needs to compile, rather than forcing users to `#include` the needed files. That section goes on to say that

[t]he source files use a source file header placed at the beginning of the file. The file headers contain the directives for providing the essential (minimum information) that needs to be captured for the respective source code.

(*Id.*).

Section B.3.10.2 (Source File Organization) of that SDP also includes the following text:

### **B.3.10.2 Source File Organization**

The statement groupings *within the source file* are:

```
<Source file header>
<#includes>
<Global variable declarations>
<Global within file constant definitions>
<Global within file variable declarations>
<Static function prototypes>
<Source Code>
```

Source files must not *#include* unnecessary [sic] include files [emphasis added].

(*Id.*).

Finally, Section B.4 (C# Coding Standards) of that SDP states that “[s]ource code should not be modified for unit testing except when friending is needed between the source code assembly and corresponding unit tests assembly” and that “[t]o perform friending as an example, modify the original C# source file”. (*Id.*).

The term “source code files” LMSSC repeatedly inserted into sections 5.13.2 and 5.14.1 of its GPS IIIF SDP is nowhere to be found in the GPS IIIF contract—as indicated above, paragraph 3.2 of DI-IPSC-81441A uses the term “source files”. Since LMSSC used that term of its own volition, that post-award conduct validates the Government’s interpretation that “source files” include “source code”. Similarly, section B.3.10.2 of LMSSC’s GPS IIIF SDF states that “source code” resides within “source files”. Likewise, section B.4 of LMSSC’s GPS IIIF SDP states that to modify the “source file”, LMSSC’s software engineers must modify the “source code”. All of these admissions LMSSC software engineers made are contained in a document that is based upon SMC-S-012 Appendix D § D.3, Table D.3-1, Item No. 27 quoted above. According to section 2.2.2.8.a and 2.2.3.8.a of the GPS IIIF SOW, all software engineers LMSSC assigns to the GPS IIIF program must use that SDP to develop and qualify GPS IIIF bus flight software and navigation payload flight software, respectively.

These post-award admissions prove the reasonableness of the Government’s position that the term “source files” in paragraph 3.2 of DI-IPSC-81441A is synonymous with the term “source code” because “source files” *contain* “source code”. LMSSC’s letter to me of July 29, 2021 did not address these admissions in a compliance document it created a year before this dispute arose. These post-award admissions refute LMSSC’s July 29, 2021 letter that asserted that “source files” as defined in CDRL A032 do not include “source code”.

One final assertion LMSSC made in its July 29, 2021 letter to which I need to respond. That letter asserted that

[t]he Contract CDRL requirements in A032 changed materially from GPS III to GPS IIIF. Most importantly, the Parties removed not only the specific language that “this data shall include both the software executable and source codes”, but also the express requirement that “executable flight software . . . shall also be delivered to operations.” No analog to either of these requirements is found in A032 from GPS IIIF.

LMSSC’s letter failed to identify how these facts would satisfy any element of any legal theory that would relieve it from the requirement in the GPS IIIF contract to deliver source code to the Space Force. I am not required to speculate regarding what legal theory LMSSC might have been referring to that would render the facts LMSSC has brought to my attention relevant.

Therefore, it is sufficient for me to reiterate why LMSSC’s attempt to make the irrelevant relevant is unavailing, for as I stated in my letter to LMSSC of June 23, 2021,

if the Government would have copied the sentence that reads “This data shall include both the software executable and source codes” from GPS III CDRL A032 and pasted that sentence into GPS IIIF CDRL A032, it would have violated a basic principle of contract drafting:

[ ] **Minimize the duplication of ideas.** Eliminate repetitiousness. In old-style drafting, redundant provisions were commonplace. Drafters would say the same thing, more or less, in different places—but often with variable expressions. This habit is dangerous, given that judges are likely to read purposeful changes in sense into variations in wording. [footnote omitted].<sup>5</sup>

In other words, by omitting from the tailored GPS IIIF CDRL A032 the phrase “source code”, the Government eliminated the repetitious use of the phrase “source code” that currently exists in CDRL A032 of the GPS III contract [footnote omitted].

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<sup>5</sup> Bryan A. Garner, *Garner’s Guidelines for Drafting and Editing Contracts* 72 (2019)(boldface in original). The date the Air Force issued the GPS IIIF RFP (13 February 2018) that intentionally omitted from GPS IIIF CDRL A032 the “repetitious” sentence found in GPS III CDRL A032 predated the publication of this authoritative treatise (9 May 2019) by nearly 15 months.

When I confronted LMSSC with the applicability of this authoritative treatise, all LMSSC could say is that it disagreed that this change was a mere “housekeeping” matter and that somehow the omission of the redundant term “source code” from CDRL A032—when the term “source files” was already in that CDRL via paragraph 3.2 of DI-IPSC-81441A—“reflects a

material change”. Significantly, however, LMSSC’s July 29, 2021 letter never explained how that change was “material”.

My letter of June 23, 2021 also stated that, “consistent with the recommendation made by a Lockheed Martin patent attorney two months ago, the parties to the GPS IIIF contract made ‘every effort to express the delivery requirements [for computer software] with clear terminology that specifically use[d] the modifiers ‘source’ and ‘executable’” (quoting James G. McEwen, David S. Bloch, Richard M. Gray & John T. Lucas, *IP and Technology in Government Contracts: Procurement and Partnering at the Federal and State Level* § 2.05[3] (p. 104)(2021 ed.)). So try as hard as LMSSC might to assert the existence of a “material” change between the text in GPS III CDRL A032 and the text in GPS IIIF CDRL A032—but not provide an explanation as to why that is the case—the fact remains that:

- Paragraph 3.2 of DI-IPSC-81441A of CDRL A032 of the GPS IIIF contract requires that LMSSC deliver to the Space Force “the *source* files for the CSCI, including any batch files, command files, data files, or other files needed to regenerate the executable software for the CSCI. *In order for a body of software to be considered a valid copy of the CSCI’s source files, it must be shown to match these files exactly* [emphasis added]” (finding 41),
- The first sentence of that paragraph is virtually identical to the text in paragraph 5.13.2 of LMSSC’s GPS IIIF SDP—*i.e.*, “The source code files include any batch, command, data, test, support, and all other files needed to generate the executable development and support software using the same programming language compilers”, (finding 51), and
- That paragraph of LMSSC’s GPS IIIF SDP uses a term that proves that LMSSC’s current position is inconsistent with the position of the software engineers it assigned to the GPS IIIF program—a *term found nowhere in the GPS IIIF contract*: “source code files”.

## 5. Summary.

Based upon the analysis provided above, I conclude that “source files” as that term is used in DI-IPSC-81441A paragraph 3.2 includes “source code”, that those source files must include “any batch files, command files, data files, or other files needed to regenerate the executable software for the [Software Item (SI), and i]n order for a body of software to be considered a valid copy of the [SI]’s source files, it must be shown to match these files exactly.” LMSSC’s unsupported opinion to the contrary is inconsistent with trade usage, the terms of the GPS IIIF contract, and LMSSC’s post-award conduct. As a result, I also conclude that the GPS IIIF contract requires LMSSC to deliver all GPS IIIF noncommercial and commercial computer software (both source and executable code). That software shall include all Bus and Navigation Payload Flight software—including OBC/TCU/MDU source code—excluding Commercially Available Off-the-Shelf (COTS) software—consistent with the promise LM’s (then) Chief Executive Officer made when LMSSC submitted its GPS IIIF Initial Proposal to the Air Force over three years ago.



### **C. The GPS IIIF Contract Requires LMSSC to Deliver GPS III OBC/TCU/MDU Flight Software Source Code Via TopVue and the IDE-R.**

When LMSSC first informed me in its letter of July 29, 2021 that “LM Space construed the CDRLs narrowly to meet the RFP requirements by making files available through the GCE-F rather than delivering those files through the IDE-R”—*e.g.*, it would make the source code CDRL A032 requires it deliver to the Space Force “available” vice that source code being a “deliverable”—that assertion created ambiguity where no such ambiguity exists in the GPS IIIF contract. Therefore, the purpose of this section is to explain the basis for my Final Decision regarding the means of transmission of that deliverable LMSSC must use to comply with the terms and conditions of that contract.

The GPS IIIF contract requires LMSSC to deliver CDRL A032 in two ways. First, Section J, Exhibit A, Section II, ¶ 6.4 requires LMSSC to submit unclassified CDRLs “via the TopVue tool and in accordance with this instruction.” (Finding 39). To understand the second way that contract requires LMSSC to deliver CDRL A031 requires I provide some background information.

As stated above, the GPS IIIF contract requires LMSSC to establish an integrated data environment, the concept of operations of which is discussed in Section J, Attachment 5, Appendix B of that contract. (Finding 48). While the GPS IIIF Final Proposal provided detailed instructions regarding what information offerors should provide in that Appendix, the Air Force left it to the offerors to determine the level of specificity they would include in that Appendix. (Finding 30). Put another way, that Appendix in the GPS IIIF contract now contains text LMSSC—not the Air Force— drafted.

Section 1 of Appendix B states that the IDE-R is one subdivision of the GCEF enclave that resides on LMSSC’s servers. (Finding 48). Section 3(d) of that Appendix states that LMSSC will deposit CDRLs (*e.g.*, A032) *into* the IDE-R subdivision of the GCEF enclave—not into some other non-IDE-R subdivision of the GCEF enclave. (Finding 49). I therefore conclude that LMSSC must also deposit all GPS IIIF commercial and noncommercial technical data and computer software described in CDRL A032—including OBC/TCU/MDU Flight Software source code but excluding COTS source code—into the IDE-R subdivision of the GCEF enclave not later than the dates specified in BLKs 12 and 13 of the DD Form 1423 for that CDRL. Because that was the *certification* the (then) CEO of LM made to the Air Force when LMSSC submitted its GPS IIIF Initial Proposal to the Air Force over three years ago. (Finding 34). Put another way, none of that IP content shall be included in a non-IDE-R subdivision of the GCEF enclave.

### **D. LMSSC’s Remaining Assertions Are Incorrect.**

LMSSC’s July 29, 2020 letter made various additional assertions that are incorrect. Accordingly, the following discussion adjudicates those additional assertions.

For example, that letter asserted that

during the proposal phase for the GPS[ ]IIF Contract, the Government required the Contractor to assert only a single data rights assertion for each CDRL. The Government levied this requirement even though each CDRL could potentially contain multiple technical data and software elements, and certainly would contain multiple data elements under the Government's current expansive reading of A032. LM Space understood during the proposal phase that the Government did not intend its Request For Proposal to violate 10 U.S.C. § 2320(H) by requiring the Contractor to relinquish data rights, which is the effect of requiring a single data rights assertion per CDRL. [footnote omitted] If the Parties had intended to include multiple software deliverables within the CDRL, it is inconceivable that they would have used a single data rights assertion approach.

(Finding 57).

This paragraph basically sets up the following standard-form categorical syllogism:

- **Major premise:** “[D]uring the proposal phase for the GPS[ ]IIF Contract, the Government required [offerors] to assert only a single data rights assertion for each CDRL . . . even though each CDRL could potentially contain multiple technical and software elements and certainly would contain multiple data elements under the Government's current expansive reading of [CDRL] A032. . . . If the Parties had intended to include multiple software deliverables within the CDRL, it is inconceivable that they would have used a single data rights assertion approach.”
- **Minor premise:** “LM Space understood during the proposal phase that the Government did not intend its Request for Proposal to violate 10 U.S.C. § 2320(a)(H) [sic—the citation should have read 2320(a)(2)(H)] by requiring the Contractor to relinquish data rights, which is the effect of requiring a single data rights assertion per CDRL[footnote omitted].”
- **Conclusion:** LMSSC reasonably interpreted that the language requiring it grant the Air Force greater IP *rights* meant that it was not required to *deliver IP content* allegedly developed exclusively at private expense.

Regarding the **major premise** in LMSSC's syllogism, the GPS IIF Final RFP and resulting GPS IIF contract prove that premise is false. As stated above, Section J, Attachment 5(d)(2) of the GPS IIF Final RFP put LMSSC on express notice that, “[s]ince some CDRLs (i.e., CDRLs A006, A007, A034, A058, A114) require the delivery of both technical data and contract administration information, different license rights will apply to those portions of those CDRLs that require the delivery of technical data than those portions that require the delivery of contract administration information” and provided detailed instructions regarding how to mark such deliverables with the appropriate restrictive markings. (Finding 24). Section L-6.3.4.1.6.d.2) of the GPS III Final RFP provided detailed instructions for completing Attachment 5 that included



the following comment with respect to completing Column 4 (Offeror Proposed RIGHTS CATEGORY) of Table 1:

(Note that Attachment 5 indicates that some CDRLs require delivery of both technical data and computer software. Under such circumstances, the Offeror shall identify what level of license rights it proposes to deliver to all technical data described in that CDRL and what level of license rights it proposes to deliver to all computer software described in that CDRL.) . . . The Offeror shall propose only one type of license rights for all content required to be delivered as part of that CDRL, except where Attachment 5 expressly states otherwise for CDRLs A006, A007, A027, A032, A058, A082, A114, and A124.

(Finding 30).

As a result, Tables 1 (Rights in Noncommercial Technical Data, Computer Software, and Computer Software Documentation) and 3 (Rights in Contract Administration Information) the pricing tables in Attachment 5 of the GPS IIIF Final RFP reflect not less than 12 examples of situations where the Air Force requested offerors propose more than one type of IP license to various portions of CDRLs they proposed to deliver to the Air Force. (Finding 25).

When submitting its GPS IIIF Initial Proposal, LMSSC made no changes to this construct—which thus remains in the GPS IIIF contract to this day. (Findings 24, 32, 46). In other words, LMSSC has known of the existence of these 12 examples since the date the Air Force released the GPS IIIF Final RFP (February 13, 2018). Nevertheless, LMSSC misrepresented to me on July 29, 2021 that “during the proposal phase for the GPS[ ]IIIF Contract, the Government required the Contractor to assert only a single data rights assertion for each CDRL.” (Finding 58). To put it charitably, this major premise in LMSSC’s syllogism is incorrect.

With respect to LMSSC’s comment associated with its minor premise, it is not only “conceivable” that the “Parties . . . intended to include multiple software deliverables within the CDRL” and—as proven above in fact—“used a single data rights assertion approach,”

- That is precisely what an authoritative treatise co-authored by a LM patent attorney recommends “the Parties” do: “It will be easier for all parties to handle and protect the data/software if the entire deliverable is governed by a Special License Agreement rather than being segregated into multiple sub-elements, each subject to different standard licenses.”<sup>4</sup>
- LMSSC could not have had any other understanding that that was the Air Force’s intent once it received the Air Force’s response to LMSSC’s November 13, 2017 comments on Section L-6.3.4.1.1 of the draft GPS IIIF RFP. That response put LMSSC on actual notice that permitting offerors unfettered latitude “to generally

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<sup>4</sup> *IP and Technology in Government Contracts*, *supra*, CUI - 47 at § 2.05[11][f][ii] (pp. 161-162).

bid the appropriate level of rights based on DFARS and how the data or software was actually developed” (finding 11) was

not executable[ for two reasons: (1)] The Government’s minimum needs are established by the GPS Directorate, and the Government has expressly stated its minimum needs for license rights CDRL-by-CDRL—as listed in Section L-6.3.4.1.6.b. The pedigree of its minimum needs are consistent with H.R. Rep. No. 115-200, p. 165. [(2) S]ince implementing the comment’s suggestion would create *the absence of a common technical baseline*, there would be no way for the Government to complete a proper cost/price-technical tradeoff analysis between offerors proposing whatever level of license rights they believed would satisfy the Government unstated “minimum needs” *accompanied by an aggregated price for IP rights under CLIN 0011 to the data to be delivered via a specific CDRL*.

(Finding 12) (emphasis added).

But if that were not enough to have put LMSSC on actual notice of the Air Force’s intent, surely the Air Force’s response to LMSSC’s November 13, 2017 comments on section L-6.3.4.1.6.b.2) of the draft GPS IIIF RFP—in that case, LMSSC’s comment was that, “[g]iven the Government has determined the level of rights required to comp[ete] on-orbit sustainment, why didn’t the Government allow Offerors to generally bid the appropriate level of rights based on DFARS and how the data or software was actually developed, while allowing the Government a specially negotiated license for the On-Orbit Sustainment Contractor(s)?” (finding 13)—should have sufficed:

Since this comment has a quote from Section L-6.3.4.1.6.b.2), and when it is read in conjunction with Attachment 5, Table 1, it is clear that the comment relates only to CDRLs A001-A005, A008-A009, A013, A032, A034, A036-A037, A044, A047, A058, A063, A066, A069, A070, A072-A073, A078, A080-A083, A086, A088-A090, A093, A095, A099, A107, A109, A114, A124, A126, and A151.

The GPS Directorate does not intend to permit offerors to propose data rights different from what is listed in Attachment 5 of this solicitation for the following reasons:

1) *The comment is written from a theoretical level which makes it impossible to modify any of the requested data rights.* Without a compelling argument, i.e. a specific item of technical data where the requested data rights may affect the proposal, it is impossible to modify any of the requested data rights.

2) The definition of “Government Purpose Rights” in DFARS 252.227-7013(a)(13) and -7014(a)(12) expressly permits the Government *to use technical data and computer software to be delivered with those rights to compete on-orbit sustainment of GPS IIF satellites.*

3) The Government is requesting the offerors propose a “specially negotiated license” (i.e., Government Purpose Rights) *for specific CDRLs or portions thereof based upon the three parameters enunciated in H.R. Rep. No. 115-200: “[T]he committee urges program managers when seeking technical data to consider . . . the purpose for which it will be used, with whom the government needs to share it, and for how long the government needs it.”*

4) Each offeror could propose a different special license for each sentence, paragraph, and page of each of the 111 CDRLs in Exhibit A, *but this would eliminate the Government's ability to use a common technical baseline when evaluating the technical acceptability of each offeror's proposal.*

(*Id.*) (emphasis added).

Based upon this contemporaneous documentation LMSSC received months before it submitted its GPS IIF Initial Proposal to the Air Force, it is “inconceivable” to me that LMSSC would not have concluded upon reading the Air Force’s responses to its comments on the draft GPS IIF RFP that the Government’s approach was carefully crafted to

- Ensure that the GPS IIF RFP was drafted in a fashion that would enable offerors to intelligently prepare their proposals and be sufficiently free from ambiguity and accurately describe the Air Force’s minimum needs so offerors could compete on a common basis (“common technical baseline”), and
- Comply with the mandate in 10 U.S.C. § 2439 that the Secretary of Defense negotiate a price for technical data to be delivered under a contract for the production of a major weapon system like GPS IIF. After all, the Air Force provided LMSSC the pedigree of the quotation in one of its responses from (and the citation in both responses to) “H.R. Rep. No. 115-200, p. 165”. H.R. Rep. No. 115-200 accompanied H.R. 2810. Page 165 of that House Report explained why the House Armed Services Committee included Section 812 into the House FY18 National Defense Authorization bill. Section 812 became 10 U.S.C. § 2439.

As to the **minor premise** in LMSSCs syllogism: For at least the past three decades, the Government Accountability Office (GAO) has warned the procurement community not to

“conflate use rights with delivery of items, which are legally distinct concepts.”<sup>5</sup> In this regard, 10 U.S.C. § 2320(a)(2)(H)’s mandate that a contractor or subcontractor (or a prospective contractor or subcontractor) may not be required as a condition of being responsive to a solicitation or as a condition for the award of a contract to sell or otherwise relinquish any rights in technical data developed exclusively at private expense except for certain enumerated items, only applies to what IP *rights* the Government may acquire to *delivered technical data*. By its very terms, it does not speak to—much less restrict—the Government’s ability to require *delivery of technical data* or *computer software* like the OBC/TCU/MDU Flight Software source and executable code CDRL A032 requires LMSSC to deliver to the Space Force. (And neither, for that matter does the analogous noncommercial computer software regulatory restriction in DFARS 227.7203-1(c).)

Reduced to its essence, this is the inevitable result of LMSSC’s attempt to conflate the “legally distinct concepts” of IP deliverables and the IP rights associated with those deliverables. Specifically, notwithstanding any *specialty negotiated license* that baselines the level of IP *rights* an offeror may agree to grant the Government to all IP *content* required to be delivered under that CDRL to a single level prior to award—*i.e.*, that to which LMSSC agreed prior to award would govern all parts of the IP *content* in CDRL A032 consistent with the recommendations made by a LM patent attorney quoted above—if that offeror is awarded the contract it can then refuse to *deliver* part of the IP *content* prescribed by that CDRL by merely asserting based upon the source of funding test in DFARS 227.7103-4(b)(for noncommercial technical data) and 227.7203-4(b)(for noncommercial computer software) that would otherwise govern what *standard IP rights* the contractor will grant the Government, that it developed that part of the IP *content* required to be delivered under that CDRL exclusively at private expense.

That is simply not—and has never been—the law. And LMSSC must know that is the case. After all, the identity of the protester in the first GAO bid protest decision cited in footnote 5 is a wholly-owned subsidiary of LM. I therefore reject LMSSC’s attempt to conflate the “legally distinct concepts” of IP deliverables the IP rights associated with those deliverables. And since the major and minor premises of LMSSC’s syllogism are false, its conclusion is not valid.

LMSSC’s July 29, 2020 letter also contended that

[t]he Government further understood that such deliverables would reference proprietary data to be provided only via proprietary

databases allowing the Government to confirm the analysis against the design.

(Finding 57).

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<sup>5</sup> *Sikorsky Aircraft Corporation*, B-416027, B-416027.2, May 22, 2018, 2018 CPD ¶ 177 at 11. *Accord Varian Associates, Inc.—Reconsideration*, *supra*, at p. CUI-37 (“[I]t is therefore clear that DD Form 1423 is used to assist in defining delivery obligations, not in establishing the government’s rights to use delivered data”).

LMSSC's letter does not cite to—much less paraphrase, much less quote from—any contemporaneous documentation created prior to the date the Air Force awarded it the GPS IIIF contract that supports that proposition. Certainly nothing in LMSSC's Pre-Proposal Conference Summary expressly addressed that topic. (Finding 31).

Similarly, nothing in the requirements for an IDE described in Appendix B of Attachment 5 of the GPS IIIF contract LMSSC drafted and submitted to the Government as part of its GPS IIIF Initial Proposal stated that “deliverables would reference proprietary data to be provided only via proprietary databases” for the sole purpose of “allowing the Government to confirm the analysis against the design.” To the contrary, section 3(d) of that Appendix identified the “minimum IDE-R data types” would include “Data listed on the Data Accession List (DAL), A039”, “Contract Data Requirements List (CDRL deliverables, Exhibit A”, “Failure Reporting Analysis, and Corrective Action System (FRACAS) data”, Engineering Model files”, and Special Studies database”. In any case, any such alleged “understanding” cannot override unambiguous contract language to the contrary.

Finally, LMSSC's July 29, 2020 letter stated that “the Government encouraged LM Space to map a specific item asserted with restrictions to a specific paragraph of the DIDs.” (Finding 58). Section L-4.2.4.3.b.1) of the GPS IIIF Final RFP required that the Offeror's completed Section K provision (DFARS 252.227-7017 (‘Identification and Assertion of use, Release, or Disclosure Restrictions’)

[c]ite to and quote the specific language (if any) in the applicable CDRL in Exhibit A that requires the delivery of that technical data, computer software, or computer software documentation. Citations provided shall be to the lowest achievable level of specificity, *e.g.*, a specific sub-sub-subsection of a compliance document cited in BLK 16 of a DD Form 1423, specific paragraph of text in BLK 16 of a DDD Form 1423 that is tailoring a DID cited in BLK 4 of that DD Form 1423.

(Finding 28).

But as demonstrated by its completed—and later modified—DFARS 252.227-7017 certification/representation incorporated by reference into the GPS IIIF contract via Modification P00009, LMSSC did not follow these instructions. (Findings 33, 50). And LMSSC's GPS IIIF Initial Proposal explains why it did not do so:

[f]or . . . non-commercial technical data, LM confirms we propose only one type of license rights for all content required to be delivered as part of that CDRL item. Since LM does not propose to deliver any CDRL item with less than the minimum needs, no citations or quotations to the applicable CDRL language are required or provided [in LMSSC's completed Section K provision (DFARS 252.227-7017 (Identification and Assertion of Use, Release, or Disclosure Restrictions)], nor are explanations as to



why data does not fit within one of the exceptions in 10 U.S.C. § 2320(a)(2)(C), DFARS 227.7103-5(a)(2) and (a)(4) through (a)(9), and DFARS 227.7203-5(a)(3) through (6).

(Finding 33).

LMSSC's July 29, 2021 letter failed to consider this language from LMSSC's GPS IIIF Initial Proposal. In any case, since LMSSC did not follow section L-4.2.4.3.b.1.), this statement on LMSSC's part is a red herring.

Next, I address LMSSC's December 7, 2021 letter, which contains its newest argument—that LMSSC “now” understands the USSF's requirement is for “delivery” of source code under CDRL A032 “and not just providing the source code.” (Finding 58). For the following reasons, LMSSC's position does not constitute “new information” as that term is used in DFARS 252.227-7014(e)(3) that would support LMSSC's attempt to interpose new IP rights assertions on the USSF's ability to use, release, or disclose the content of CDRL A032 outside the Government.

*First*, as stated in Section III.A above, the DFARS indicates the words “provided”, “delivered”, and “furnished” are synonymous with each other. Therefore, LMSSC has invented a distinction with no legal difference.

*Second*, there is only one reasonable interpretation any LMSSC software engineer that read DI-IPSC-81441A paragraph 3.2, CDRL A032, and SMC-S-012, Appendix D, Section D.3, Table D.3-1, ID No. 27 prior to LMSSC's submission of its GPS IIIF Initial Proposal could have come to: That the *IP deliverable* (CDRL A032) that requires LMSSC to “provide” “source files” meant that LMSSC must “deliver” “source code”. Those software engineers could then have

- Informed LMSSC's proposal preparation manager of that fact, whereupon
- LMSSC could have made the additional *IP rights* assertions LMSSC and its subcontractors now belatedly make, so that LMSSC could
- Roll the dice by taking the risk the Source Selection Authority (SSA) would assess that feature of LMSSC's GPS IIIF Initial Proposal as a Significant Weakness consistent with Sections M-4.1.2.c.1) and M-4.4.3.a.2) of the GPS IIIF Final RFP, thereby
- Requiring the SSA to assess an Unacceptable Technical Risk Rating to LMSSC's Technical Volume in accordance with Section M, Table 3 of that RFP, thereby
- Preventing the SSA from awarding the GPS IIIF contract to LMSSC.

In other words, in an attempt to shoehorn its “new” revelation into DFARS 252.227-7014(e)(3), LMSSC seeks to yet again conflate the legally distinct concepts of what *IP content* must be delivered with what *IP rights* a contractor grants to that deliverable. But as stated above and in section IV below, I have confined the scope of this Final Decision to the former concept—and expressly excluded the latter concept from its scope—for a very simple reason: LMSSC has yet to deliver CDRL A032.

*Third*, the following omissions in LMSSC's letter speak louder than the words in that letter:

- It did not provide any contemporaneous documentation proving it held a belief prior to award that CDRL A032 did not require it to deliver to the Air Force anything other than all GPS IIIF Space Vehicle Bus and Navigation Payload Flight noncommercial and commercial technical data and computer software—including both source and executable code (including OBC/TCU/MDU Flight Software source code) but excluding Commercially Available Off-the Shelf (COTS) source code.
- It did not provide any evidence that the Air Force was aware of its alleged belief—certainly no such belief was stated in LMSSC's comments on CDRL A032 in response to the draft GPS IIIF RFP. (Finding 5).
- Significantly, while LMSSC's letter proposes to replace the word “provided” with “deliver” in CDRL A032, *it does not propose to replace the phrase “source files” with “source code”*. (Finding 58).

Based upon these facts I conclude that LMSSC now realizes the positions it took in its July 29, 2021 are untenable—which led LMSSC in its December 7, 2021 letter to invent a new position based upon irrelevant text in DFARS 252.227-7014(e)(3). LMSSC's latest attempt to evade unambiguous contract requirements to deliver IP its CEO agreed LMSSC would deliver to the Air Force is as untenable as were its previous arguments. In short, I find that LMSSC has failed to demonstrate that “new information” exists as that term is used in DFARS 252.227-7014(e)(3).

#### **IV. CONTRACTING OFFICER'S FINAL DECISION.**

Pursuant to FAR 52.233-1 incorporated by reference into the GPS IIIF contract, I have reviewed the relevant facts, including LMSSC's response to my letter of June 23, 2021 that stated it is not required to deliver GPS IIIF MDU Flight Software source code to the Space Force and that it is only required to make that “source code available with appropriate markings.” For the reasons provided above, I have determined that LMSSC's position is incorrect. I therefore interpret that the contract requires LMSSC to deliver all GPS IIIF Space Vehicle Bus and Navigation Payload Flight noncommercial and commercial technical data and computer software—including both source and executable code (including OBC/TCU/MDU Flight Software source code) but excluding COTS source code—required by CDRL A032 to the Space Force via TopVue and the IDE-R subdivision of the GCEF enclave not later than the dates specified in BLKs 12-13 of the DD Form 1423 for that CDRL. Furthermore, I find that Lockheed has failed to demonstrate that “new information” exists as that term is used in DFARS 252.227-7014(e)(3). I therefore direct LMSSC to deliver that IP to the Space Force.

This is the final decision of the Contracting Officer. You may appeal this decision to the agency board of contract appeals. If you decide to appeal, you must, within 90 days from the date you receive this decision, mail or otherwise furnish written notice to the agency board of contract appeals and provide a copy to the Contracting Officer from whose decision this appeal is taken. The notice shall indicate that an appeal is intended, reference this decision, and identify the



contract by number.

With regard to appeals to the agency board of contract appeals, you may, solely at your election, proceed under the board's-

(1) Small claims procedure for claims of \$50,000 or less or, in the case of a small business concern (as defined in the Small Business Act and regulations under that Act), \$150,000 or less; or

(2) Accelerated procedure for claims of \$100,000 or less.

Instead of appealing to the agency board of contract appeals, you may bring an action directly in the United States Court of Federal Claims (except as provided in 41 U.S.C. 7102(d), regarding Maritime Contracts) within 12 months you receive this decision.

CAPRISTAN.ALEJ  
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ALEJANDRO CAPRISTAN  
Contracting Officer  
Space Production Corps

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Date: 2021.12.24 15:00:26 -08'00'

cc: Program Executive Officer (Space Production)  
Deputy General Counsel (Contractor Responsibility  
& Conflict Resolution)(SAF/GCR)

Encl.

(1) Letter from Marillyn A. Hewson, Chairman, President and CEO, Lockheed Martin Corporation to Mr. Roy Lee, Procuring Contracting Officer, Subj: Solicitation No. FA8807-17-R-0009, of 16 Apr 18



**Marillyn A. Hewson**  
Chairman, President and Chief Executive Officer

16 April 2018

Mr. Roy Lee  
Procuring Contracting Officer  
GPS Directorate  
483 N. Aviation Blvd.  
Los Angeles AFB  
El Segundo, CA 90245

Subject: Solicitation No. FA8807-17-R-0009

I hereby certify, as CEO of Lockheed Martin Corporation, that the Lockheed Martin Corporation proposal has met all solicitation requirements, including but not limited to, all representations and certifications in Section K of the solicitation, and all mandatory technical and Statement of Work (SOW) requirements as outlined in the subject solicitation. Particularly, my signature indicates Lockheed Martin Corporation's acceptance of the terms and conditions of the Model Contract, Statements of Work, and all other attachments – specifically Attachment 5, Rights in Data (Including Technical Data, Computer Software, and Computer Software Documentation).

Lockheed Martin Corporation

A handwritten signature in black ink that reads "Marillyn A. Hewson". The signature is written in a cursive, flowing style.

Marillyn A. Hewson  
Chairman, President and CEO